INDIAN CHRONOLOGY

(SOLAR, LUNAR AND PLANETARY)

A

PRACTICAL GUIDE

TO

THE INTERPRETATION AND VARIFICATION

OF

Tithis, Nakshatras, Horoscopes and Other Indian Time-records

B.C. 1 to A.D. 2000

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PREFACE.

THIS book, which was announced to the public under various names *, is now issued under a title which restricts it to its original scope, namely, as a **Manual of Indian Chronology**, designed to present in one view and in a usable form all the material ordinarily required by investigators in that field of research.

The bulk of the tables, as well as of the letter-press, is devoted to a detailed exhibition of the *decursus* of Indian Chronology, solar, lunar and planetary, with eclipses, week-days, English calendar months and dates, *adhika* and *kshaya masas*, and mean places of the Sun and major planets, from B.C. 1 to A.D. 2000. The portion of the work, called Table X, will, it is hoped, supply a long-felt want among Epigraphists and Archæologists, official as well as non-official, in India, inasmuch as it will enable them to verify on the spot and *in less than a minute in any case*, the exact English equivalent of any Indian date occurring in any inscription as well as to test its genuineness. The instructions set opposite the Eye-Table at the end of the book are alone sufficient for any person, however previously unacquainted with the subject, to calculate quite accurately the ending moment of a *tithi* or *nakshatra*.

The work is intended, however, for the use of a much wider public than the scientific few who are interested in Indian chronological research. The same principles, whereby we are enabled to re-call into the light of history the inscriptions that are being unearthed at the rate of a thousand every year by the various Indian Epigraphical departments, continue to guide the religious observances and civil usages of millions of people in India at the present day, and no one interested in the social and religious life of this vast continent can fail to take at least some slight account of a system, so ancient and so thoroughly ingrained in the habits of the people. The Indian calendar is generally considered either too abstruse for popular, or too inaccurate for scientific, exposition, but neither of these objections is more than a fallacy. A good deal has been done in the past to put Indian chronology on its proper footing, namely, as the faithful handmaid of Indian history, and there is no reason why the torch so worthily carried in their day by the late Professor Kielhorn, the present Dr. Fleet and other workers in the field, should not be kept bright and burning in the hands of their successors, provided they are equipped with the necessary knowledge of data and principles.

Lastly, there is hardly any person, holding a position of consequence, public or private, in India, who is not occasionally confronted with the citation of an Indian date. To Magistrates, Judges, Lawyers, Missionaries, Business Men of every description, as well as to Historians, it is of interest to know the meaning of chronological terms in daily use among the people, although all may not, equally with the epigraphist and the archæologist, feel inclined to enter upon a regular study of Indian chronology. To those with scanty leisure, Tables XII and XVIII, forming a luni-solar and planetary Ephemeris for the 80 years A.D. 1840 to A.D. 1920, together with the simple instructions as to their use, contained in the Second and Fourth Parts of the book headed "Use of the Tables" and "Planetary Chronology" as well as in the Eye-Table, will be found no less handy than serviceable. The publications ordinarily known by the name of *Jantri* are unscientific, and few of them are up to date, whereas the ephemeris portion of the present work will enable any one to understand and decide, with reference to first principles, any question of current Indian chronology for seventy years past and some ten years to come. A table (XV) has also been inserted to link together the Indian and Muhammadan calendars.

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* "*Tithis, Nakshatras and other Indian dates B.C. 1 to A.D. 2000*" (*Indian Review* for May 1910); "*Indian Astronomy and Chronology with a Criticism on Indian Astrology*" (Advt. page of the *Journal of the South Indian Association*, Madras), etc.

The book necessarily contains a vast amount of figures and tables, but the perusal of no part of it will requisition a greater knowledge of mathematics than is implied in the four simple rules of Arithmetic. Decimals have been used freely in order to ensure accuracy, but not only have tables whereby the decimal parts of a day, degree, etc., can be converted into *ghatikas*, *palas*, hours, minutes and seconds, been freely inserted, but the more important tables for the calculation of anomalies and equations for *tithis* and *nakshatras* (Table IX) and the Nakshatra Table itself (Table XI) have been twice given, once in the form of decimals and again as days, *ghatikas* and *palas*.

It was originally intended to limit this compilation to solar and lunar chronology, but the frequent occurrence, in chronological records, in Indian literature as well as in daily Indian life, of allusions to the mean or actual places of planets, induced the writer to add a considerable number of tables on this interesting, though somewhat difficult, subject. The tables of anomalies and equations, used for planets, are based mainly on those of *Vavilala Kuchinna*, as reproduced in Warren's *Kala Sankalita*. The computation of the geocentric longitudes of planets for the years A.D. 1840 to A.D. 1920, contained in Table XVIII, entailed an enormous number of detailed calculations, but the results will, it is hoped, be found sufficiently accurate for practical purposes. By "practical purposes" the author means solely the purposes of Indian chronology, and he wishes it to be distinctly understood that he does not believe in astrology any more than in the need for, or efficacy of, the fasts, festivals and donations mentioned in Chapter XVI, "Notes on tithis in relation to festivals", which find a place in this book, merely and solely because of the frequent references in inscriptions to Hindu fasts and feasts.

In conclusion, the author wishes to state that, while he has spared no pains to acquaint himself with the works of previous writers on the subject, he has endeavoured to work out details upon his own method which is explained in Part III—"Construction of Tables". To one honoured name in the field of Indian astronomy and chronology, that of **Professor Hermann Jacobi**, he wishes, though an utter stranger, to express special indebtedness, since to him the author owes his first knowledge of the subject as well as numerous illustrations serving to test the correctness of his method.

Lastly, he must thank the *Premier Press*, of Messrs. Hoe & Co., for the skill with which they have executed a work, which, though packed with figures, has been reproduced with a high degree of neatness consistently with economy. The author would have been glad to have inserted the proper diacritical marks throughout the text, but this would have entailed further delay in publishing a work, which, in the endeavour to make it accurate and reliable in more important respects, has already been kept too long in the press. Such marks have, therefore, been sparingly used, except in the Index, which gives the proper marks for every Sanskrit word occurring in the text, and to which reference should be made in case of doubt. The Index also explains the meaning of terms not occurring in the text, such as *Dakshinayana*, *Uttarayana*, *Aparapaksha*, etc.

MADRAS,
25th March 1911.

L.D.S.

CONTENTS.

PART I.—Relations between Indian Astronomy and Indian Chronology.

PART II.—Use of the Tables.

PART III.—Construction of Tables.

TABLES.

ADDENDA.

Section 6 of Text and TABLE VI.

Surya Siddhanta Constants for Centuries from 0 Kaliyuga to 3101 K.Y. (B.C. 3102 to B.C. 1.)

Year B.C.	Kaliyuga.	Commencement of Solar Year. Month and date.	Commencement of Solar Year. Fraction of day.	First New Moon in Solar Year.	☾'s anomaly at commencement of Solar Year.
3102 B.C.	0	15F	·57924	2·17013	4·71797
3101	1	15F	·83800	20·80902	11·76692
3001	101	16F	·71365	24·27066	0·24311
2901	201	17F	·58930	27·73230	16·27388
2801	301	18F	·46494	1·66335	4·75007
2701	401	19F	·34059	5·12499	20·78084
2601	501	20F	·21624	8·58663	9·25703
2501	601	21F	·09189	12·04827	25·28780
2401	701	21F	·96754	15·50991	13·76399
2301	801	22F	·84319	18·97155	2·24018
2201	901	23F	·71883	22·43319	18·27095
2101	1001	24F	·59448	25·89483	6·74714
2001	1101	25F	·47013	29·35647	22·77791
1901	1201	26F	·34578	3·28752	11·25410
1801	1301	27F	·22143	6·74916	27·28487
1701	1401	28F	·09708	10·21080	15·76106
1601	1501	28F	·97273	13·67244	4·23725
1501 B.C.	1601	29F	·84837	17·13408	20·26802
1401	1701	1M	·72402	20·59572	8·74421
1301	1801	2M	·59967	24·05736	24·77498
1201	1901	3M	·47532	27·51900	13·25117
1101	2001	4M	·35097	1·45005	1·72736
1001	2101	5M	·22662	4·91169	17·75813
901	2201	6M	·10226	8·37393	6·23432
801	2301	6M	·97791	11·83557	22·26509
701	2401	7M	·85356	15·29721	10·74128
601	2501	8M	·72921	18·75885	26·77205
501	2601	9M	·60486	22·22049	15·24824
401	2701	10M	·48051	25·68213	3·72443
301	2801	11M	·35615	29·14377	19·75520
201	2901	12M	·23180	3·07482	8·23139
101	3001	13M	·10745	6·53646	24·26216
1	3101	13M	·98310	9·99810	12·73835

N.B.—Odd years in centuries B.C. should be converted into positive years before using Table VII. See instructions in *N.B.* to Table XXII.

It will be seen that the *Solar Year* 0 K.Y. commenced on Feb. 15·57924. If to this be added the Sodhya of 2·1707 days we have, Feb. 15·5792+2·1707 = Feb. 17·75, or midnight between 17th and 18th Feb. B.C. 3102, which was the moment of commencement of the Era, 0 Kaliyuga, according to Surya Siddhanta. See foot-note on p. (3) of the Text.

TABLE XVII.

Mean Places of Major Planets at Commencement of each Century from B.C. 1601 to B.C. 1 (K.Y. 1501 to K.Y. 3101.)

		Mars.	Mercury.	Jupiter.	Venus.	Saturn.
B.C. **1601**	K.Y. 1501	6·3122	73·0963	207·2519	359·5156	320·0274
1501	1601	66·8392	149·1143	1·9965	198·5007	101·9348
1401	1701	127·3662	225·1323	156·7411	37·4858	243·8412
1301	1801	187·8932	301·1503	311·4857	236·4709	25·7481
1201	1901	248·4202	17·1683	106·2303	75·4560	167·6550
1101	2001	308·9472	93·1863	260·9749	274·4411	309·5619
1001	2101	9·4742	169·2043	55·7195	113·4262	91·4688
901	2201	70·0012	245·2223	210·4641	312·4113	233·3757
801	2301	130·5282	321·2403	5·2087	151·3964	15·2826
701	2401	191·0552	37·2583	159·9533	350·3815	157·1895
601	2501	251·5822	113·2763	314·6979	189·3666	299·0964
501	2601	312·1092	189·2943	109·4425	28·3517	81·0033
401	2701	12·6362	265·3123	264·1871	227·3368	222·9102
301	2801	73·1632	341·3303	58·9317	66·3219	4·8171
201	2901	133·6902	57·3483	213·6763	265·3070	146·7240
101	3001	194·2172	133·3663	8·4209	104·2921	288·6309
1	3101	254·7442	209·3843	163·1655	303·2772	70·5378

EXPLANATION.

With the aid of these two tables it is possible to calculate solar dates, tithis and *nakshatras* for any date between B.C. 3102 and B.C. 1 and also any horoscope from B.C. 1601 to B.C. 1. The places of planets' nodes for any of these years can be easily deduced from the places given in Table XVII in the body of the book for the centuries 1 B.C. to A.D. 2000.

It was thought unnecessary to carry the record of the mean places of planets further back than B.C. 1601, first because it is extremely doubtful whether planetary places were noted in India even roughly before that date, and secondly, because any person wishing to ascertain the mean places of planets at an earlier date can easily do so by noting in the above table the increase of mean sidereal longitude of any planet for 100, 200, 300............etc., years, and deducting this increase from the mean place for **B.C. 1601**.

We will now present the reader with the working of two interesting problems in B.C. dates: our examples are taken from Dr. Fleet's article " The day on which Buddha died" in the *Journal of the Royal Asiatic Society* for 1909.

I. *The day on which Buddha died* :—B.C. 483, *Karttika Sukla* 8.

		Commencement of Solar year.	First New Moon in Solar year.	Moon's Anom. at commencement of Solar Year.
(Contents p. 4)	B.C. 501	March ... 9·60	22·22	15·25
(Table VII, p. 7)	Add for 18 years.	·66	10·66	16·66
	B.C. 483	March ... 10·26	32·88	31·91
			29·53 (Syn. Mon.)	27·55 (1 Anom. month)
			3·35	4·36
				3·35
				7·71 (Moon's Anomaly at First New-moon in Solar year B.C. 483.)
Table VIII (Addition for Karttika Sukla 8 in a year in which some previous month was *adhika* * is the same as that for Sukla 8 of the next month Margasira).			214·59	21·71
			217·91	29·42
				27·55 (1 Anom. month)
				1·87
Sun's Equation for 218 days (Eye-Table) −·13				−·13 (Sun's Equation)
Moon's Equation for 1·74 days (Eye-Table) −·15				1·74
Sum −·28			−·28	
			217·66	
Add commencement of Solar year			March 10·26	
			„ 227·92	

By Table VIII (p. 11), 227 days from 1 March=13 Oct., and ·92 day =(by Eye-Table) 22 hours.

∴ On Dr. Fleet's hypothesis, the tithi on which Buddha died ended on 13 Oct. B. C. 483, at 22 hrs. after Sunrise =(according to our reckoning) 4 A.M. on 14th Oct.

II. *Required the day of the Summer Solstice in the year B.C. 483*, (*i.e.*, the commencement of the Buddhist *vassa* in that year.)

The Summer Solstice happens when the sun is at 90° Tropical Longitude. Table XVII—A. gives the Sun's sidereal longitude for every complete day of the Solar year, while the table in Sec. **284**, p. (103) of the text gives us the difference between Indian sidereal and true tropical longitude for various epochs A.D. which we can apply, with sign reversed, to epochs B.C. Our epoch B.C. 483 preceded A.D. 520 by just 1003 years.

For 1000 years the movement of the precession is (by the Table in Sec. **284**) 16·5 degrees.

∴ 90° Tropical longitude in B.C. 483 corresponded to 90°+16·5°=106·5° Sidereal longitude.

By Table XVII – A, after 111 days complete, Sun's sidereal longitude is 107·26° – 1·10°=106·16°. For the balance ·34 of a degree (106·5°—106·16°=·34°) we may add (by Table XVII – C) ·33 of a day.

∴ In B.C. 483 the sun attained 90° Tropical or 106·5° Sidereal longitude at 111·33 days of the Solar year.

Since the year commenced on March 10·26, we have, as the day of the Summer Solstice, March 10·26+111·33= March 121·59=(by Table VIII) 29th June. This agrees with Prof. Jacobi's calculation, cited by Dr. Fleet *loc. cit.*

* The first New-moon in Solar year B.C. 483 being at 3·35 days, we learn from Table II, p. 2, that this was a year in which either Jyeshtha or Ashadha was *Adhika*. In fact Jyeshtha was *Adhika*.

TABLE XI—B. Shortest Interval in Days, Ghatikas and Palas

NAKSHATRAS.

Order.	Names of Nakshatras.	Order	Ordinarily Vaisakha I	Order	Ordinarily Jyeshtha II	Order	Ordinarily Ashadha III	Order	Ordinarily Sravana IV	Order	Ordinarily Bhadrapada V
			d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.
27	Revati	3	0 59 21	5	0 48 15	7	0 37 9	9	0 26 2	11	0 14 56
1	Asvini	4	2 0 4	6	1 48 58	8	1 37 51	10	1 26 45	12	1 15 39
2	Bharani	5	3 0 47	7	2 49 41	9	2 38 34	11	2 27 28	13	2 16 22
3	Krittika (*Tamil* Kiruttigai)	6	4 1 30	8	3 50 24	10	3 39 17	12	3 28 11	14	3 17 5
4	Rohini	7	5 2 13	9	4 51 7	11	4 40 0	13	4 28 54	15	4 17 48
5	Mirgasira (*Tamil* Mirugasiram)	8	6 2 56	10	5 51 50	12	5 40 43	14	5 29 37	16	5 18 31
6	Ardra (*Tamil* Arudra or Tiruvadirai)	9	7 3 39	11	6 52 33	13	6 41 26	15	6 30 20	17	6 19 14
7	Punarvasu	10	8 4 22	12	7 53 16	14	7 42 9	16	7 31 3	18	7 19 57
8	Pushya (*Tamil* Pusam)	11	9 5 4	13	8 53 59	15	8 42 52	17	8 31 46	19	8 20 40
9	Aslesha (*Tamil* Ayilyam)	12	10 5 47	14	9 54 42	16	9 43 35	18	9 32 29	20	9 21 23
10	Magha (*Tamil* Magham)	13	11 6 30	15	10 55 25	17	10 44 18	19	10 33 12	21	10 22 6
11	Purva Phalguni (*Tamil* Puram)	14	12 7 13	16	11 56 8	18	11 45 1	20	11 33 55	22	11 22 49
12	Uttara Phalguni (*Tamil* Uttiram)	15	13 7 56	17	12 56 51	19	12 45 44	21	12 34 38	23	12 23 32
13	Hasta (*Tamil* Hastam)	16	14 8 39	18	13 57 34	20	13 46 27	22	13 35 21	24	13 24 14
14	Chitra (*Tamil* Chittirai)	17	15 9 22	19	14 58 17	21	14 47 10	23	14 36 4	25	14 24 58
15	Svati	18	16 10 5	20	15 59 0	22	15 47 53	24	15 36 47	26	15 25 41
16	Visakha (*Tamil* Visakam)	19	17 10 47	21	16 59 43	23	16 48 36	25	16 37 30	27	16 26 24
17	Anuradha (*Tamil* Anusham)	20	18 11 30	22	18 0 26	24	17 49 19	26	17 30 13	1	17 27 7
18	Jyeshta (*Tamil* Kettai)	21	19 12 13	23	19 1 9	25	18 50 2	27	18 38 56	2	18 27 50
19	Mula (*Tamil* Mulam)	22	20 12 56	24	20 1 52	26	19 50 45	1	19 39 39	3	19 28 33
20	Purva Ashadha (*Tamil* Puradam)	23	21 13 39	25	21 2 35	27	20 51 28	2	20 40 22	4	20 29 16
21	Uttara Ashadha (*Tamil* Uttiradam)	24	22 14 22	26	22 3 18	1	21 52 11	3	21 41 5	5	21 29 59
22	Sravana (*Tamil* Tiruvonam)	25	23 15 5	27	23 4 1	2	22 52 54	4	22 41 48	6	22 30 42
23	Sravishta or Danishta (*Tamil* Avittam) ...	26	24 15 48	1	24 4 44	3	23 53 37	5	23 42 31	7	23 31 25
24	Satabhisaj or Sataraka (*Tamil* Sadayam) ...	27	25 16 30	2	25 5 27	4	24 54 20	6	24 43 14	8	24 32 8
25	Purva Bhadrapada (*Tamil* Purattadi) ...	1	26 17 14	3	26 6 10	5	25 55 3	7	25 43 57	9	25 32 51
26	Uttara Bhadrapada (*Tamil* Uttirattadi) ...	2	27 17 57	4	27 6 53	6	26 55 46	8	26 44 40	10	26 33 34
27	Revati	3	28 18 40	5	28 7 36	7	27 56 29	9	27 45 23	11	27 34 17
		4	29 19 23	6	29 8 19	8	28 57 12	10	28 46 6	12	28 35 0

YOGAS.

Order	Names of Yogas.	Order	I	Order	II	Order	III	Order	IV	Order	V
27	Vaidhriti	5	0 53 57	9	0 33 17	13	0 12 37	18	0 48 26	22	0 27 46
1	Vishkamba	6	1 50 26	10	1 29 46	14	1 9 6	19	1 44 56	23	1 24 16
2	Priti	7	2 46 55	11	2 26 16	15	2 5 35	20	2 41 25	24	2 20 45
3	Ayushmat	8	3 43 25	12	3 22 45	16	3 2 5	21	3 37 54	25	3 17 15
4	Saubhagya	9	4 39 54	13	4 19 14	17	3 58 34	22	4 34 24	26	4 13 44
5	Sobhana	10	5 36 23	14	5 15 43	18	4 55 4	23	5 30 53	27	5 10 14
6	Atiganda	11	6 32 53	15	6 12 13	19	5 51 33	24	6 27 23	1	6 6 43
7	Sukarman	12	7 29 22	16	7 8 42	20	6 48 2	25	7 23 52	2	7 3 13
8	Dhriti	13	8 25 51	17	8 5 12	21	7 44 32	26	8 20 21	3	7 59 41
9	Sula	14	9 22 21	18	9 1 41	22	8 41 1	27	9 16 50	4	8 56 12
10	Ganda	15	10 18 50	19	9 58 10	23	9 37 31	1	10 13 20	5	9 52 40
11	Vriddhi	16	11 15 20	20	10 54 40	24	10 34 0	2	11 9 49	6	10 49 10
12	Dhruva	17	12 11 49	21	11 51 9	25	11 30 29	3	12 6 19	7	11 45 39
13	Vyaghata	18	13 8 18	22	12 47 38	26	12 26 58	4	13 2 48	8	12 42 9
14	Harshana	19	14 4 48	23	13 44 8	27	13 23 28	5	13 59 17	9	13 38 38
15	Vajra	20	15 1 17	24	14 40 36	1	14 19 57	6	14 55 47	10	14 35 8
16	Siddhi	21	15 57 46	25	15 37 6	2	15 16 27	7	15 52 16	11	15 31 36
17	Vyatipata	22	16 54 16	26	16 33 35	3	16 12 56	8	16 48 46	12	16 28 7
18	Variyas	23	17 50 45	27	17 30 5	4	17 9 25	9	17 45 15	13	17 24 35
19	Parigha	24	18 47 15	1	18 26 34	5	18 5 55	10	18 41 44	14	18 21 5
20	Siva	25	19 43 44	2	19 23 4	6	19 2 24	11	19 38 13	15	19 17 34
21	Siddha	26	20 40 13	3	20 19 33	7	19 58 53	12	20 34 43	16	20 14 4
22	Sadhya	27	21 36 43	4	21 16 3	8	20 55 22	13	21 31 12	17	21 10 32
23	Subha	1	22 33 12	5	22 12 31	9	21 51 52	14	22 27 42	18	22 7 3
24	Sukla	2	23 29 41	6	23 9 1	10	22 48 21	15	23 24 11	19	23 3 31
25	Brahman	3	24 26 11	7	24 5 30	11	23 44 51	16	24 20 40	20	24 0 2
26	Indra	4	25 22 40	8	25 2 0	12	24 41 20	17	25 17 10	21	24 56 30
27	Vaidhriti	5	26 19 9	9	25 58 29	13	25 37 50	18	26 13 39	22	25 52 59
		6	27 15 39	10	26 54 59	14	26 34 19	19	27 10 8	23	26 49 29
		7	28 12 8	11	27 51 28	15	27 30 48	20	28 6 38	24	27 45 58
		8	29 8 37	12	28 47 58	16	28 27 18	21	29 3 7	25	28 42 27
						17	29 23 47				

from New Moon to ending Moment of each Nakshatra and Yoga.

NAKSHATRAS.

Order	Ordinarily Asvina VI	Order	Ordinarily Karttika VII	Order	Ordinarily Margasira VIII	Order	Ordinarily Pausha IX	Order	Ordinarily Magha X	Order	Ordinarily Phalguna XI	Order	Chaitra, when no Adhika Masa. XII	Order	Chaitra when there is Adhika Masa. XIII
	d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.
13	0 3 50	**16**	0 53 26	**18**	0 42 20	**20**	0 31 14	**22**	0 20 8	**24**	0 9 1	**27**	0 58 38	**2**	0 47 31
14	1 4 33	**17**	1 54 9	**19**	1 43 3	**21**	1 31 57	**23**	1 20 50	**25**	1 9 44	**1**	1 59 21	**3**	1 48 14
15	2 5 16	**18**	2 54 52	**20**	2 43 46	**22**	2 32 40	**24**	2 21 34	**26**	2 10 27	**2**	3 0 3	**4**	2 48 57
16	3 5 59	**19**	3 55 35	**21**	3 44 29	**23**	3 33 22	**25**	3 22 16	**27**	3 11 10	**3**	4 0 46	**5**	3 49 40
17	4 6 42	**20**	4 56 18	**22**	4 45 12	**24**	4 34 5	**26**	4 22 59	**1**	4 11 53	**4**	5 1 29	**6**	4 50 23
18	5 7 25	**21**	5 57 1	**23**	5 45 54	**25**	5 34 48	**27**	5 23 42	**2**	5 12 35	**5**	6 2 12	**7**	5 51 6
19	6 8 8	**22**	6 57 44	**24**	6 46 37	**26**	6 35 31	**1**	6 24 25	**3**	6 13 19	**6**	7 2 55	**8**	6 51 49
20	7 8 51	**23**	7 58 27	**25**	7 47 20	**27**	7 36 14	**2**	7 25 8	**4**	7 14 1	**7**	8 3 38	**9**	7 52 32
21	8 9 34	**24**	8 59 10	**26**	8 48 3	**1**	8 37 57	**3**	8 25 50	**5**	8 14 44	**8**	9 4 21	**10**	8 53 14
22	9 10 16	**25**	9 59 53	**27**	9 48 46	**2**	9 38 40	**4**	9 26 34	**6**	9 15 27	**9**	10 5 3	**11**	9 53 57
23	10 10 59	**26**	11 0 36	**1**	10 49 29	**3**	10 39 22	**5**	10 27 16	**7**	10 16 10	**10**	11 5 46	**12**	10 54 40
24	11 11 42	**27**	12 1 18	**2**	11 50 12	**4**	11 40 5	**6**	11 27 59	**8**	11 16 53	**11**	12 6 29	**13**	11 55 23
25	12 12 25	**1**	13 2 1	**3**	12 50 54	**5**	12 40 48	**7**	12 28 42	**9**	12 17 35	**12**	13 7 12	**14**	12 56 6
26	13 13 8	**2**	14 2 44	**4**	13 51 37	**6**	13 41 31	**8**	13 28 25	**10**	13 18 19	**13**	14 7 55	**15**	13 56 49
27	14 13 51	**3**	15 3 27	**5**	14 52 20	**7**	14 42 14	**9**	14 29 8	**11**	14 19 1	**14**	15 8 38	**16**	14 57 32
1	15 14 34	**4**	16 4 10	**6**	15 53 3	**8**	15 42 57	**10**	15 29 50	**12**	15 19 44	**15**	16 9 21	**17**	15 58 14
2	16 15 16	**5**	17 4 53	**7**	16 53 46	**9**	16 43 40	**11**	16 30 34	**13**	16 20 27	**16**	17 10 3	**18**	16 58 57
3	17 15 59	**6**	18 5 36	**8**	17 54 29	**10**	17 44 22	**12**	17 31 16	**14**	17 21 10	**17**	18 11 46	**19**	17 59 40
4	18 16 42	**7**	19 6 18	**9**	18 55 12	**11**	18 45 5	**13**	18 31 59	**15**	18 22 53	**18**	19 12 29	**20**	19 0 23
5	19 17 25	**8**	20 7 1	**10**	19 55 54	**12**	19 45 48	**14**	19 32 42	**16**	19 23 35	**19**	20 13 12	**21**	20 1 6
6	20 18 8	**9**	21 7 44	**11**	20 56 37	**13**	20 46 31	**15**	20 33 25	**17**	20 24 19	**20**	21 13 55	**22**	21 1 49
7	21 18 51	**10**	22 8 27	**12**	21 57 20	**14**	21 47 14	**16**	21 34 8	**18**	21 25 1	**21**	22 14 38	**23**	22 2 32
8	22 19 34	**11**	23 9 10	**13**	22 58 3	**15**	22 47 57	**17**	22 34 50	**19**	22 25 44	**22**	23 15 21	**24**	23 3 14
9	23 20 16	**12**	24 9 53	**14**	23 58 46	**16**	23 48 40	**18**	23 35 34	**20**	23 26 27	**23**	24 16 3	**25**	24 3 57
10	24 20 59	**13**	25 10 36	**15**	24 59 29	**17**	24 49 22	**19**	24 36 16	**21**	24 27 10	**24**	25 16 46	**26**	25 4 40
11	25 21 42	**14**	26 11 18	**16**	26 0 12	**18**	25 50 5	**20**	25 36 59	**22**	25 27 53	**25**	26 17 29	**27**	26 5 23
12	26 22 25	**15**	27 12 1	**17**	27 0 54	**19**	26 59 48	**21**	26 37 42	**23**	26 28 35	**26**	27 18 12	**1**	27 6 6
13	27 23 8	**16**	28 12 44	**18**	28 1 37	**20**	27 51 31	**22**	27 38 25	**24**	27 29 19	**27**	28 18 55	**2**	28 6 49
14	28 23 51	**17**	29 13 27	**19**	29 2 20	**21**	28 52 14	**23**	28 39 8	**25**	28 30 1	**1**	29 19 38	**3**	29 7 32
15	29 24 34									**26**	29 30 44				

YOGAS.

Order	VI	Order	VII	Order	VIII	Order	IX	Order	X	Order	XI	Order	XII	Order	XIII
26	0 7 6	**4**	0 42 56	**8**	0 22 16	**12**	0 1 36	**17**	0 37 26	**21**	0 16 46	**26**	0 52 35	**3**	0 31 55
27	1 3 36	**5**	1 39 25	**9**	1 18 46	**13**	0 58 6	**18**	1 33 55	**22**	1 13 15	**27**	1 49 5	**4**	1 28 25
1	2 0 5	**6**	2 35 55	**10**	2 15 15	**14**	1 54 35	**19**	2 30 24	**23**	2 9 45	**1**	2 45 34	**5**	2 24 54
2	2 56 35	**7**	3 32 24	**11**	3 11 44	**15**	2 51 5	**20**	3 26 54	**24**	3 6 14	**2**	3 42 3	**6**	3 21 24
3	3 53 4	**8**	4 28 54	**12**	4 8 14	**16**	3 47 34	**21**	4 23 23	**25**	4 2 43	**3**	4 38 33	**7**	4 17 53
4	4 49 33	**9**	5 25 23	**13**	5 4 43	**17**	4 44 3	**22**	5 19 53	**26**	4 59 13	**4**	5 35 2	**8**	5 14 22
5	5 46 3	**10**	6 21 52	**14**	6 1 12	**18**	5 40 32	**23**	6 16 22	**27**	5 55 42	**5**	6 31 32	**9**	6 10 52
6	6 42 32	**11**	7 18 21	**15**	6 57 42	**19**	6 37 2	**24**	7 12 51	**1**	6 52 12	**6**	7 28 1	**10**	7 7 21
7	7 39 1	**12**	8 14 51	**16**	7 54 11	**20**	7 33 31	**25**	8 9 21	**2**	7 48 41	**7**	8 24 30	**11**	8 3 50
8	8 35 31	**13**	9 11 20	**17**	8 50 40	**21**	8 30 1	**26**	9 5 50	**3**	8 45 10	**8**	9 20 58	**12**	9 0 20
9	9 32 0	**14**	10 7 50	**18**	9 47 10	**22**	9 26 30	**27**	10 2 20	**4**	9 41 39	**9**	10 17 29	**13**	9 56 49
10	10 28 30	**15**	11 4 19	**19**	10 43 39	**23**	10 22 59	**1**	10 58 49	**5**	10 38 9	**10**	11 13 57	**14**	10 53 18
11	11 24 59	**16**	12 0 48	**20**	11 40 9	**24**	11 19 29	**2**	11 55 18	**6**	11 34 38	**11**	12 10 28	**15**	11 49 48
12	12 21 28	**17**	12 57 18	**21**	12 36 38	**25**	12 15 58	**3**	12 51 47	**7**	12 31 8	**12**	13 6 56	**16**	12 46 17
13	13 17 58	**18**	13 53 47	**22**	13 33 7	**26**	13 12 27	**4**	13 48 17	**8**	13 27 37	**13**	14 3 27	**17**	13 42 47
14	14 14 27	**19**	14 50 16	**23**	14 29 36	**27**	14 8 57	**5**	14 44 46	**9**	14 24 6	**14**	14 59 55	**18**	14 39 16
15	15 10 57	**20**	15 46 46	**24**	15 26 6	**1**	15 5 26	**6**	15 41 16	**10**	15 20 36	**15**	15 56 25	**19**	15 35 45
16	16 7 25	**21**	16 43 15	**25**	16 22 35	**2**	16 1 55	**7**	16 37 45	**11**	16 17 5	**16**	16 52 53	**20**	16 32 15
17	17 3 55	**22**	17 39 45	**26**	17 19 5	**3**	16 58 25	**8**	17 34 14	**12**	17 13 35	**17**	17 49 24	**21**	17 28 44
18	18 0 24	**23**	18 36 14	**27**	18 15 34	**4**	17 54 54	**9**	18 30 44	**13**	18 10 4	**18**	18 45 52	**22**	18 25 13
19	18 56 54	**24**	19 32 43	**1**	19 12 3	**5**	18 51 24	**10**	19 27 13	**14**	19 6 33	**19**	19 42 23	**23**	19 21 43
20	19 53 23	**25**	20 29 13	**2**	20 8 33	**6**	19 47 53	**11**	20 23 42	**15**	20 3 2	**20**	20 38 51	**24**	20 18 12
21	20 49 53	**26**	21 25 42	**3**	21 5 2	**7**	20 44 22	**12**	21 20 12	**16**	20 59 32	**21**	21 35 22	**25**	21 14 42
22	21 46 22	**27**	22 22 12	**4**	22 1 32	**8**	21 40 51	**13**	22 16 41	**17**	21 56 1	**22**	22 31 50	**26**	22 11 11
23	22 42 51	**1**	23 18 41	**5**	22 58 1	**9**	22 37 21	**14**	23 13 10	**18**	22 52 31	**23**	23 28 20	**27**	23 7 40
24	23 39 21	**2**	24 15 10	**6**	23 54 30	**10**	23 33 50	**15**	24 9 40	**19**	23 49 0	**24**	24 24 49	**1**	24 4 10
25	24 35 50	**3**	25 11 40	**7**	24 51 0	**11**	24 30 20	**16**	25 6 9	**20**	24 45 29	**25**	25 21 19	**2**	25 0 39
26	25 32 19	**4**	26 8 9	**8**	25 47 29	**12**	25 26 49	**17**	26 2 38	**21**	25 41 59	**26**	26 17 48	**3**	25 57 9
27	26 28 48	**5**	27 4 38	**9**	26 43 58	**13**	26 23 18	**18**	26 59 8	**22**	26 38 28	**27**	27 14 18	**4**	26 53 38
1	27 25 18	**6**	28 1 7	**10**	27 40 28	**14**	27 19 48	**19**	27 55 37	**23**	27 34 57	**1**	28 10 47	**5**	27 50 8
2	28 21 47	**7**	28 57 37	**11**	28 36 57	**15**	28 16 17	**20**	28 52 7	**24**	28 31 27	**2**	29 7 16	**6**	28 46 37
3	29 18 17					**16**	29 12 47			**25**	29 27 56				

TABLE XI--C. Annual Correction (additive) for Nakshatras and Yogas A.D. 1840--A.D. 1920.

	Nakshatras.			Yogas.				Nakshatras.			Yogas.				Nakshatras.			Yogas.				Nakshatras.			Yogas.		
A. D.	d.	gh.	p.	d.	gh.	p.	**A. D.**	d.	gh.	p.	d.	gh.	p.	**A. D.**	d.	gh.	p.	d.	gh.	p.	**A. D.**	d.	gh.	p.	d.	gh.	p.
1840	0	40	22	1	15	7	**1860**	1	30	16	2	47	59	**1880**	0	7	38	0	14	14	**1900**	0	57	33	1	47	6
1841	1	29	15	2	46	5	**1861**	0	6	37	0	12	19	**1881**	0	56	32	1	45	11	**1901**	1	46	26	3	18	3
1842	0	11	35	0	10	25	**1862**	0	55	30	1	43	17	**1882**	1	45	24	3	16	9	**1902**	0	22	46	0	42	24
1843	0	54	28	1	41	2[illegible]	**1863**	1	44	23	3	14	15	**1883**	0	21	45	0	40	29	**1903**	1	11	39	2	13	21
1844	1	43	21	3	12	20	**1864**	0	20	44	0	38	35	**1884**	1	10	38	2	11	27	**1904**	2	0	32	3	44	19
1845	0	19	42	0	36	41	**1865**	1	9	37	2	9	31	**1885**	1	59	31	3	42	24	**1905**	0	36	53	1	8	39
1846	1	8	35	2	7	38	**1866**	1	58	30	3	40	30	**1886**	0	35	52	1	6	45	**1906**	1	25	46	2	49	37
1847	1	57	28	3	38	36	**1867**	0	34	50	1	4	51	**1887**	1	24	45	2	37	43	**1907**	0	2	7	0	3	57
1848	0	33	49	1	2	57	**1868**	1	23	43	2	35	48	**1888**	0	1	6	0	2	3	**1908**	0	51	0	1	34	55
1849	1	22	42	2	33	54	**1869**	0	0	4	0	0	9	**1889**	0	49	59	1	33	1	**1909**	1	39	53	3	5	53
1850	2	11	35	4	4	52	**1870**	0	48	57	1	31	6	**1890**	1	38	52	3	3	58	**1910**	0	16	14	0	30	13
1851	0	47	56	1	29	12	**1871**	1	37	50	3	2	4	**1891**	0	15	12	0	28	19	**1911**	1	5	7	2	1	11
1852	1	36	49	3	0	10	**1872**	0	14	11	0	26	24	**1892**	1	4	5	1	59	17	**1912**	1	54	0	3	32	8
1853	0	13	9	0	24	30	**1873**	1	3	4	1	57	22	**1893**	1	52	58	3	30	14	**1913**	0	30	21	0	56	29
1854	1	2	3	1	55	28	**1874**	1	51	57	3	28	20	**1894**	0	23	20	0	54	34	**1914**	1	19	14	2	27	27
1855	1	50	56	3	26	26	**1875**	0	20	18	0	52	40	**1895**	1	18	12	2	25	32	**1915**	2	8	7	3	58	24
1856	0	27	16	0	50	46	**1876**	1	17	11	2	23	38	**1896**	2	7	5	3	56	30	**1916**	0	44	27	1	22	45
1857	2	16	9	2	21	44	**1877**	2	6	4	3	54	35	**1897**	0	43	26	1	20	50	**1917**	1	33	20	2	53	42
1858	2	5	2	3	52	41	**1878**	1	42	24	1	18	56	**1898**	1	32	19	2	51	48	**1918**	0	9	41	0	18	3
1859	0	40	23	1	16	47	**1879**	1	31	18	2	49	54	**1899**	0	8	40	0	16	8	**1919**	0	58	34	1	49	0

EXPLANATION.

In the *N.B.* to Sec. **263**, p. (95) of the text additive tables for Nakshatras were promised with the next edition. The convenience of having additive formulæ for the current epoch A.D. 1840 to A.D. 1920 is so great that the necessary tables are presented to the reader in the above addenda as Tables XI—B. and XI—C. Examples will now be given, showing how these tables should be used.

I. Required the ending moment of Nakshatra Krittika for the month of July 1910 (*vide* p. 232 of Tables).

		d.	gh.	p.	☾'s Anom. d.	gh.	p.	
(Table XII, p. 15) Jyeshtha New Moon.	June	7	39	7	2	30	40	
(Table XI—B. previous page) Shortest interval from Jyeshtha New Moon to No. 3 Krittika Nakshatra.		26	6	10	26	6	10	
Add Nakshatra correction for 1910 (XI—C. *Supra.*)		0	16	14	0	16	14	
	June	34	1	31	28	53	4	
(Table IX-*l*, p. 23.) Nakshatra Eqn. for Anom. of 1 d. 19 gh. 47 p.			− 6	20	27	33	17	(1 Anom. Month.)
	June	33	55	11	1	19	47	

Krittika Nakshatra ended on June 33, *i.e.*, on 3 July 1910, at 55 ghatikas 11 palas after mean Lanka Sunrise. If we want local time, we should use Table XIII.

II. Required the ending moment of Yoga Vyatipata (No. 17) in July 1910.

		d.	gh.	p.	☉'s Anom. d.	gh.	p.	☾'s Anom. d.	gh.	p.
(Table XII, p. 151.) Ashadha New Moon.	July	7	10	57	84	58	29	4	29	13
(Table XI—B, previous page) Shortest interval from Ashadha New Moon to No. 17 Vyatipata Yoga.		3	58	34	3	58	34	3	58	34
(XI—C. *Supra*) *Add* Yoga correction for A. D. 1910.		0	30	13	0	30	13	0	30	13
(Table IX-*i*, p. 20*a*) Sun's Yoga Eqn. for 89 d. 27 gh. + 1 gh. 25 p.		11	39	44	89	27	16	8	58	0
„ p. 20*b*, Moon's Yoga Eqn. for 8 d. 59 gh. 25 p. − 19 gh. 40 p.										
Sum − 18 gh. 15 p.		−	18	15	(☉'s Yoga Eqn.)			+	1	25
	July	11	21	29				8	59	25

i. e., No. 17 Yoga Vyatipata ended at 21 gh. 29 p. after mean Lanka Sunrise on 11 July 1910.

Addendum. **TABLES XI—D and XI-E. Shortest Interval in days and decimals of a day from new moon to ending moment of each Nakshatra and each Yoga.**

EXPLANATION.

Tables XI-D and XI-E, which are printed on the next two pages, are the additive tables promised in N.B. to S. 263, p. (95) of the Text. One of the intervals in Table XI-D, as well as the result of the application of Table XI-E, should be *added* to the moment of new moon in order to ascertain the ending moment of any *nakshatra* or *yoga*. Though the tables are, as a whole, additive, it should be remembered that in using Table XI-E, the correction corresponding to the decimal portion of the argument should be *subtracted* from the correction corresponding to the integral number of days after which the first new moon appears in each solar year. Where great accuracy is not essential, it is unnecessary to calculate the correction corresponding to the decimal portion of the argument. The argument for Table XI-E is always the day of the First New Moon in the Solar Year. When the First New Moon is less than a day old in the Solar Year, prefix 0 to the argument. Thus, for A.D. 1915 (First New Moon in Solar Year, 0·9855) the Nakshatra correction is 2·2089 - (·0733 + ·0004) = 2·1352; and the Yoga correction is 4·11036 - (·13641 + ·00076) = 4·07319.

EXAMPLES.

The examples on the previous page will first be worked out with the aid of Tables XI-D and XI-E on the next two pages.

I.—Required the ending moment of Nakshatra Krittika for the month of July 1910. (*see* Tables, p. 232.)

	Month.	Day.	Fraction of day.	☾'s Anom. days.
(Table X, p. 126) Jyeshtha New Moon, A.D. 1910 ...	June	7	·65	0·535 + 1·976
(Table-XI D, next page). Shortest interval from Jyeshtha New Moon to No. 3. Krittika Nakshatra ...		+ 26	·10	+ 26·10
				28·61
				- 27·55 (1 Anom. Month.)
				1·06
(Table XI-E). The first New Moon in the Solar Year being, according to Table X, at 25·91 days, this is the argument for Table XI-E (next page). The Nakshatra correction for A.D. 1910-11 is, therefore by Table XI-E, 0·34 *minus* ·07 = ...		+	·27	+ ·27
	June	34	·02	1·33
Table (IX-*j*). Nakshatra equation corresponding to ☾'s Anom. of 1·33 days			- ·11	
	June	33	·91	

i.e., (by Eye-table) the Nakshatra Krittika in July 1910 ended on June 33, that is, on 3 July, at 55 ghatikas after mean sunrise.

II.—Required the ending moment of Yoga Vyatipata (No. 17) in July 1910. (*see* Tables, p. 232.)

	days	⊙'s Anom. days.	☾'s Anom. days.
(Table X, p. 126.) Ashadha New Moon, A.D. 1910. ...	July 7·18	25·91 +59·06	0·53 +3·95
(Table XI-D next page). Shortest interval from Ashadha New Moon to No. 17 Vyatipata Yoga	+ 3·98	+ 3·98	+ 3·98
(Table XI-E). Applying, as before, the argument for A.D. 1910-11, *i.e.*, 25·91 to the Yoga correction table in XI-E, we have 0·63 *minus* ·13 = ...	+ ·50	+ ·50	+ ·50
	July 11·66	89·45	8·96
		or	or
	=July 11, 39⅜gh.	89d. 27gh.	8 days 57½ gh.
Table IX-(*i*) : ⊙'s Yoga equation for 89d. 27 gh. = +1½ gh. Table IX-(*i*) : ☾'s Yoga equation for 8d. 59 gh. = −19⅞ gh.			+1½gh. [⊙'s yoga equation by Table IX-(*i*)]
−18⅜ gh.	−18⅜gh.		8 days, 59 gh.

Ending moment of No. 17 Vyatipata Yoga, July 11, 21⅛gh. after mean (Lanka) sunrise.

N. B.—The difference between this result and that arrived at on the last page is due to the fact that in the present working we have used only two decimal places for mean ending moments and anomalies.

We see that the method is applicable to Nakshtras and Yogas in any year, B.C. or A.D., not merely in the years A.D. 1840-A.D. 1920, as in Tables XI-B and XI-C on the three previous pages.

Continued on page 12.

Addendum. **TABLE XI—D. Shortest Interval in Days, from New-Moon to ending NAKSHATRAS.**

Order	Names of Nakshatras.	Order	Ordinarily Vaisakha I	Order	Ordinarily Jyeshtha II	Order	Ordinarily Ashadha III	Order	Ordinarily Sravana IV	Order	Ordinarily Bhadrapada V	Order	Ordinarily Asvina VI	Order	Ordinarily Karttika VII	Order	Ordinarily Margasira VIII
27	Revati	3	0·9892	5	0·8041	7	0·6190	9	0·4339	11	0·2488	13	0·0638	16	0·8906	18	0·7055
1	Asvini	4	2·0011	6	1·8160	8	1·6309	10	1·4458	12	1·2608	14	1·0757	17	1·9025	19	1·7174
2	Bharani	5	3·0130	7	2·8279	9	2·6428	11	2·4578	13	2·2727	15	2·0376	18	2·9144	20	2·7293
3	Krittika	6	4·0249	8	3·3398	10	3·6548	12	3·4697	14	3·2846	16	3·0995	19	3·9263	21	3·7412
4	Rohini	7	5·0368	9	4·8518	11	4·6667	13	4·4816	15	4·2965	17	4·1114	20	4·9382	22	4·7532
5	Mirgasira ...	8	6·0488	10	5·8637	12	5·6786	14	5·4935	16	5·3084	18	5·1233	21	5·9502	23	5·7651
6	Ardra	9	7·0607	11	6·8756	13	6·6905	15	6·5054	17	6·3203	19	6·1352	22	6·9621	24	6·7770
7	Punarvasu ...	10	8·0726	12	7·8875	14	7·7024	16	7·5173	18	7·3322	20	7·1472	23	7·9740	25	7·7889
8	Pushya	11	9·0845	13	8·8994	15	8·7143	17	8·5292	19	8·3442	21	8·1591	24	8·9859	26	8·8008
9	Aslesha	12	10·0964	14	9·9113	16	9·7262	18	9·5412	20	9·3561	22	9·1710	25	9·9978	27	9·8127
0	Magha	13	11·1083	15	10·9232	17	10·7382	19	10·5531	21	10·3680	23	10·1829	26	11·0097	1	10·8246
11	Purva Phalguni ...	14	12·1202	16	11·9352	18	11·7501	20	11·5650	22	11·3799	24	11·1948	27	12·0216	2	11·8366
12	Uttara Phalguni ...	15	13·1322	17	12·9471	19	12·7620	21	12·5769	23	12·3918	25	12·2067	1	13·0336	3	12·8485
13	Hasta	16	14·1441	18	13·9590	20	13·7739	22	13·5888	24	13·4037	26	13·2186	2	14·0455	4	13·8604
14	Chitra	17	15·1560	19	14·9709	21	14·7858	23	14·6007	25	14·4156	27	14·2306	3	15·0574	5	14·8723
15	Svati	18	16·1679	20	15·9828	22	15·7977	24	15·6126	26	15·4276	1	15·2425	4	16·0693	6	15·8842
16	Visakha	19	17·1798	21	16·9947	23	16·8096	25	16·6246	27	16·4395	2	16·2544	5	17·0812	7	16·8961
17	Anuradha ...	20	18·1917	22	18·0066	24	17·8216	26	17·6365	1	17·4514	3	17·2663	6	18·0931	8	17·9080
18	Jyeshtha	21	19·2036	23	19·0186	25	18·8335	27	18·6484	2	18·4633	4	18·2782	7	19·1050	9	18·9199
19	Mula	22	20·2156	24	20·0305	26	19·8454	1	19·6603	3	19·4752	5	19·2901	8	20·1169	10	19·9319
20	Purva Ashadha ...	23	21·2275	25	21·0424	27	20·8573	2	20·6722	4	20·4871	6	20·3020	9	21·1289	11	20·9438
21	Uttara Ashadha ...	24	22·2394	26	22·0543	1	21·8692	3	21·6841	5	21·4990	7	21·3139	10	22·1408	12	21·9557
22	Sravana	25	23·2513	27	23·0662	2	22·8811	4	22·6960	6	22·5109	8	22·3259	11	23·1527	13	22·9676
23	Sravishta ...	26	24·2632	1	24·0781	3	23·8930	5	23·7079	7	23·5229	9	23·3378	12	24·1646	14	23·9795
24	Satabhisaj ...	27	25·2751	2	25·0900	4	24·9049	6	24·7199	8	24·5348	10	24·3497	13	25·1765	15	24·9914
25	Purva Bhadrapada .	1	26·2870	3	26·1019	5	25·9169	7	25·7318	9	25·5467	11	25·3616	14	26·1884	16	26·0033
26	Uttara Bhadrapada.	2	27·2990	4	27·1139	6	26·9288	8	26·7437	10	26·5586	12	26·3735	15	27·2003	17	27·0153
27	Revati	3	28·3109	5	28·1258	7	27·9407	9	27·7556	11	27·5705	13	27·3854	16	28·2123	18	28·0272
		4	29·3228	6	29·1377	8	23·9526	10	28·7675	12	28·5824	14	28·3973	17	29·2242	19	29·0391
												15	29·4093				

YOGAS.

Order	Names of Yogas.	Order	I	Order	II	Order	III	Order	IV	Order	V	Order	VI	Order	VII	Order	VIII
27	Vaidhriti ...	5	0·8992	9	0·5548	13	0·2104	18	0·8075	22	0·4631	26	0·1187	4	0·7157	8	0·3713
1	Vishkamba ...	6	1·8407	10	1·4963	14	1·1519	19	1·7490	23	1·4016	27	1·0601	5	1·6572	9	1·3128
2	Priti ...	7	2·7822	11	2·4378	15	2·0934	20	2·6905	24	2·3460	1	2·0016	6	2·5987	10	2·2543
3	Ayushmat ...	8	3·7237	12	3·3793	16	3·0349	21	3·6319	25	3·2875	2	2·9431	7	3·5402	11	3·1958
4	Saubhagya ...	9	4·6652	13	4·3208	17	3·9763	22	4·5734	26	4·2290	3	3·8846	8	4·4817	12	4·1373
5	Sobhana ...	10	5·6067	14	5·2622	18	4·9178	23	5·5149	27	5·1705	4	4·8261	9	5·4232	13	5·0788
6	Atiganda ...	11	6·5482	15	6·2037	19	5·8593	24	6·4564	1	6·1120	5	5·7676	10	6·3647	14	6·0203
7	Sukarman ...	12	7·4896	16	7·1452	20	6·8008	25	7·3979	2	7·0535	6	6·7091	11	7·3062	15	6·9618
8	Dhriti ...	13	8·4311	17	8·0867	21	7·7423	26	8·3394	3	7·9950	7	7·6506	12	8·2477	16	7·9032
9	Sula ...	14	9·3726	18	9·0282	22	8·6838	27	9·2809	4	8·9365	8	8·5921	13	9·1891	17	8·8447
10	Ganda ...	15	10·3141	19	9·9697	23	9·6253	1	10·2224	5	9·8780	9	9·5335	14	10·1306	18	9·7862
11	Vriddhi ...	16	11·2556	20	10·9112	24	10·5668	2	11·1639	6	10·8195	10	10·4750	15	11·0721	19	10·7277
12	Dhruva ...	17	12·1971	21	11·8527	25	11·5083	3	12·1053	7	11·7609	11	11·4165	16	12·0136	20	11·6692
13	Vyaghata ...	18	13·1386	22	12·7942	26	12·4498	4	13·0468	8	12·7024	12	12·3580	17	12·9551	21	12·6107
14	Harshana ...	19	14·0801	23	13·7357	27	13·3912	5	13·9883	9	13·6439	13	13·2995	18	13·8966	22	13·5522
15	Vajra ...	20	15·0216	24	14·6771	1	14·3327	6	14·9298	10	14·5854	14	14·2410	19	14·8381	23	14·4937
16	Siddhi ...	21	15·9630	25	15·6186	2	15·2742	7	15·8713	11	15·5269	15	15·1825	20	15·7796	24	15·4352
17	Vyatipata ...	22	16·9045	26	16·5601	3	16·2157	8	16·8128	12	16·4684	16	16·1240	21	16·7211	25	16·3766
18	Variyas ...	23	17·8460	27	17·5016	4	17·1572	9	17·7543	13	17·4099	17	17·0655	22	17·6625	26	17·3181
19	Parigha ...	24	18·7875	1	18·4431	5	18·0987	10	18·6958	14	18·3514	18	18·0070	23	18·6040	27	18·2596
20	Siva ...	25	19·7290	2	19·3846	6	19·0402	11	19·6373	15	19·2929	19	18·9484	24	19·5455	1	19·2011
21	Siddha ...	26	20·6705	3	20·3261	7	19·9817	12	20·5788	16	20·2343	20	19·8899	25	20·4870	2	20·1426
22	Sadhya ...	27	21·6120	4	21·2676	8	20·9232	13	21·5202	17	21·1758	21	20·8314	26	21·4285	3	21·0841
23	Subha ...	1	22·5535	5	22·2091	9	21·8647	14	22·4617	18	22·1173	22	21·7729	27	22·3700	4	22·0256
24	Sukla ...	2	23·4950	6	23·1506	10	22·8061	15	23·4032	19	23·0588	23	22·7144	1	23·3115	5	22·9671
25	Brahman ...	3	24·4365	7	24·0920	11	23·7476	16	24·3447	20	24·0003	24	23·6559	2	24·2530	6	23·9086
26	Indra ...	4	25·3779	8	25·0335	12	24·6891	17	25·2862	21	24·9418	25	24·5974	3	25·1945	7	24·8501
27	Vaidhriti ...	5	26·3194	9	25·9750	13	25·6306	18	26·2277	22	25·8833	26	25·5389	4	26·1360	8	25·7915
		6	27·2609	10	26·9165	14	26·5721	19	27·1692	23	26·8248	27	26·4804	5	27·0774	9	26·7330
		7	28·2024	11	27·8580	15	27·5136	20	28·1107	24	27·7663	1	27·4219	6	28·0189	10	27·6745
		8	29·1439	12	28·7995	16	28·4551	21	29·0522	25	28·7078	2	28·3633	7	28·9604	11	28·6160
						17	29·3966					3	29·3048				

Moment of each Nakshatra and Yoga.

NAKSHATRAS.

Order	Ordinarily Pausha IX	Order	Ordinarily Magha X	Order	Ordinarily Phalguna XI	Order	Chaitra, when no Adhika Masa. XII	Order	Chaitra when there is Adhika Masa. XIII
20	0·5204	**22**	0·3353	**24**	0·1502	**27**	0·9771	**2**	0·7920
21	1·5323	**23**	1·3472	**25**	1·1622	**1**	1·9890	**3**	1·8039
22	2·5442	**24**	2·3592	**26**	2·1741	**2**	3·0009	**4**	2·8158
23	3·5562	**25**	3·3711	**27**	3·1860	**3**	4·0128	**5**	3·8277
24	4·5681	**26**	4·3830	**1**	4·1979	**4**	5·0247	**6**	4·8396
25	5·5800	**27**	5·3949	**2**	5·2098	**5**	6·0366	**7**	5·8516
26	6·5919	**1**	6·4068	**3**	6·2217	**6**	7·0486	**8**	6·8635
27	7·6038	**2**	7·4187	**4**	7·2336	**7**	8·0605	**9**	7·8754
1	8·6157	**3**	8·4306	**5**	8·2456	**8**	9·0724	**10**	8·8873
2	9·6276	**4**	9·4426	**6**	9·2575	**9**	10·0843	**11**	9·8992
3	10·6396	**5**	10·4545	**7**	10·2694	**10**	11·0962	**12**	10·9111
4	11·6515	**6**	11·4664	**8**	11·2813	**11**	12·1081	**13**	11·9230
5	12·6634	**7**	12·4783	**9**	12·2932	**12**	13·1200	**14**	12·9350
6	13·6753	**8**	13·4902	**10**	13·3051	**13**	14·1320	**15**	13·9469
7	14·6872	**9**	14·5021	**11**	14·3170	**14**	15·1439	**16**	14·9588
8	15·6991	**10**	15·5140	**12**	15·3290	**15**	16·1558	**17**	15·9707
9	16·7110	**11**	16·5260	**13**	16·3409	**16**	17·1677	**18**	16·9826
10	17·7230	**12**	17·5379	**14**	17·3528	**17**	18·1796	**19**	17·9945
11	18·7349	**13**	18·5498	**15**	18·3647	**18**	19·1915	**20**	19·0064
12	19·7468	**14**	19·5617	**16**	19·3766	**19**	20·2034	**21**	20·0183
13	20·7587	**15**	20·5736	**17**	20·3885	**20**	21·2153	**22**	21·0303
14	21·7706	**16**	21·5855	**18**	21·4004	**21**	22·2273	**23**	22·0422
15	22·7825	**17**	22·5974	**19**	22·4124	**22**	23·2392	**24**	23·0541
16	23·7944	**18**	23·6094	**20**	23·4243	**23**	24·2511	**25**	24·0660
17	24·8064	**19**	24·6213	**21**	24·4362	**24**	25·2630	**26**	25·0779
18	25·8183	**20**	25·6332	**22**	25·4481	**25**	26·2749	**27**	26·0898
19	26·8302	**21**	26·6451	**23**	26·4600	**26**	27·2868	**1**	27·1017
20	27·8421	**22**	27·6570	**24**	27·4719	**27**	28·2987	**2**	28·1137
21	28·8540	**23**	28·6689	**25**	28·4838	**1**	29·3197	**3**	29·1256
				26	29·4957				

YOGAS.

Order	IX	Order	X	Order	XI	Order	XII	Order	XIII
12	0·0269	**17**	0·6240	**21**	0·2796	**26**	0·8767	**3**	0·5323
13	0·9684	**18**	1·5655	**22**	1·2211	**27**	1·8182	**4**	1·4737
14	1·9099	**19**	2·5070	**23**	2·1626	**1**	2·7596	**5**	2·4152
15	2·8514	**20**	3·4485	**24**	3·1041	**2**	3·7011	**6**	3·3567
16	3·7929	**21**	4·3900	**25**	4·0455	**3**	4·6426	**7**	4·2932
17	4·7344	**22**	5·3314	**26**	4·9870	**4**	5·5841	**8**	5·2397
18	5·6759	**23**	6·2729	**27**	5·9285	**5**	6·5256	**9**	6·1812
19	6·6173	**24**	7·2144	**1**	6·8700	**6**	7·4671	**10**	7·1227
20	7·5588	**25**	8·1559	**2**	7·8115	**7**	8·4086	**11**	8·0642
21	8·5003	**26**	9·0974	**3**	8·7530	**8**	9·3501	**12**	9·0057
22	9·4418	**27**	10·0389	**4**	9·6945	**9**	10·2916	**13**	9·9472
23	10·3833	**1**	10·9804	**5**	10·6360	**10**	11·2331	**14**	10·8886
24	11·3248	**2**	11·9219	**6**	11·5775	**11**	12·1745	**15**	11·8301
25	12·2663	**3**	12·8634	**7**	12·5190	**12**	13·1160	**16**	12·7716
26	13·2078	**4**	13·8048	**8**	13·4604	**13**	14·0575	**17**	13·7131
27	14·1493	**5**	14·7463	**9**	14·4019	**14**	14·9990	**18**	14·6546
1	15·0907	**6**	15·6878	**10**	15·3434	**15**	15·9405	**19**	15·5961
2	16·0322	**7**	16·6293	**11**	16·2849	**16**	16·8820	**20**	16·5376
3	16·9737	**8**	17·5708	**12**	17·2264	**17**	17·8235	**21**	17·4791
4	17·9152	**9**	18·5123	**13**	18·1679	**18**	18·7650	**22**	18·4206
5	18·8567	**10**	19·4538	**14**	19·1094	**19**	19·7065	**23**	19·3621
6	19·7982	**11**	20·3953	**15**	20·0509	**20**	20·6479	**24**	20·3035
7	20·7397	**12**	21·3368	**16**	20·9924	**21**	21·5894	**25**	21·2450
8	21·6812	**13**	22·2783	**17**	21·9338	**22**	22·5309	**26**	22·1865
9	22·6227	**14**	23·2197	**18**	22·8753	**23**	23·4724	**27**	23·1280
10	23·5642	**15**	24·1612	**19**	23·8168	**24**	24·4134	**1**	24·0695
11	24·5056	**16**	25·1027	**20**	24·7583	**25**	25·3554	**2**	25·0110
12	25·4471	**17**	26·0442	**21**	25·6998	**26**	26·2969	**3**	25·9525
13	26·3886	**18**	26·9857	**22**	26·6413	**27**	27·2384	**4**	26·8940
14	27·3301	**19**	27·9272	**23**	27·5828	**1**	28·1799	**5**	27·8355
15	28·2716	**20**	28·8687	**24**	28·5243	**2**	29·1214	**6**	28·7769
16	29·2131			**25**	29·4658				

TABLE XI—E. ANNUAL CORRECTION.

Argument:—Date of appearance of 1st New-Moon in each Solar Year according to Table X.

The correction corresponding to the decimal portion of the argument should be subtracted from the Nakshatra or Yoga correction corresponding to the integral portion; thus the Nakshatra correction corresponding to an argument 28·53= 0·11 *minus* ·04=0·07.

NAKSHATRAS.

Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.
0	2·20890	**·01**	·00075	**·30**	·02244	**·59**	·04413	**·88**	·06582
1	2·13410	**·02**	·00150	**·31**	·02319	**·60**	·04488	**·89**	·06657
2	2·05930	**·03**	·00224	**·32**	·02394	**·61**	·04563	**·90**	·06732
3	1·98450	**·04**	·00299	**·33**	·02468	**·62**	·04638	**·91**	·06807
4	1·90970	**·05**	·00374	**·34**	·02543	**·63**	·04712	**·92**	·06882
5	1·83490	**·06**	·00449	**·35**	·02618	**·64**	·04787	**·93**	·06956
6	1·76010	**·07**	·00524	**·36**	·02693	**·65**	·04862	**·94**	·07031
7	1·68531	**·08**	·00598	**·37**	·02768	**·66**	·04937	**·95**	·07106
8	1·61049	**·09**	·00673	**·38**	·02842	**·67**	·05012	**·96**	·07181
9	1·53569	**·10**	·00748	**·39**	·02917	**·68**	·05086	**·97**	·07256
10	1·46089	**·11**	·00823	**·40**	·02992	**·69**	·05161	**·98**	·07330
11	1·38609	**·12**	·00898	**·41**	·03067	**·70**	·05236	**·99**	·07405
12	1·31129	**·13**	·00972	**·42**	·03142	**·71**	·05311		
13	1·23649	**·14**	·01047	**·43**	·03216	**·72**	·05386		
14	1·16169	**·15**	·01122	**·44**	·03291	**·73**	·05460		
15	1·08689	**·16**	·01197	**·45**	·03366	**·74**	·05535		
16	1·01209	**·17**	·01272	**·46**	·03441	**·75**	·05610		
17	0·93729	**·18**	·01346	**·47**	·03516	**·76**	·05685		
18	0.86249	**·19**	·01421	**·48**	·03590	**·77**	·05760		
19	0·78769	**·20**	·01496	**·49**	·03665	**·78**	·05834		
20	0·71288	**·21**	·01571	**·50**	·03740	**·79**	·05909		
21	0·63808	**·22**	·01646	**·51**	·03815	**·80**	·05984		
22	0·56328	**·23**	·01720	**·52**	·03890	**·81**	·06059		
23	0·48848	**·24**	·01795	**·53**	·03964	**·82**	·06134		
24	0·41368	**·25**	·01870	**·54**	·04039	**·83**	·06208		
25	0·33888	**·26**	·01945	**·55**	·04114	**·84**	·06283		
26	0·26408	**·27**	·02020	**·56**	·04189	**·85**	·06358		
27	0·18928	**·28**	·02094	**·57**	·04264	**·86**	·06433		
28	0·11448	**·29**	·02169	**·58**	·04338	**·87**	·06508		
29	0·03968								

YOGAS.

Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.
0	4·11036	**·01**	·00139	**.30**	·04176	**·59**	.08212	**·88**	·12249
1	3·97117	**·02**	·00278	**·31**	·04315	**·60**	·08351	**·89**	12388
2	3·83198	**·03**	00417	**·32**	·04454	**·61**	·08491	**·90**	·12527
3	3·69279	**·04**	·00557	**·33**	·04593	**·62**	·08630	**·91**	·12666
4	3·55360	**·05**	·00696	**·34**	·04732	**·63**	·08769	**·92**	·12805
5	3·41441	**·06**	·00835	**·35**	·04872	**·64**	·08908	**·93**	·12945
6	3·27522	**·07**	·00974	**·36**	·05011	**·65**	·09047	**·94**	·13084
7	3·13603	**·08**	·01113	**·37**	·05150	**·66**	·09186	**·95**	·13223
8	2·99684	**·09**	·01253	**·38**	·05289	**·67**	·09326	**·96**	·13362
9	2·85765	**·10**	·01392	**·39**	·05428	**·68**	·09465	**·97**	·13601
10	2·71846	**·11**	·01530	**·40**	·05568	**·69**	·09604	**·98**	·13641
11	2·57927	**·12**	·01670	**·41**	·05707	**·70**	·09743	**·99**	·13780
12	2·44008	**·13**	·01809	**·42**	·05846	**·71**	·09882		
13	2·30089	**·14**	·01949	**·43**	·05985	**·72**	·10022		
14	2·16170	**·15**	·02088	**·44**	·06124	**·73**	·10161		
15	2·02251	**·16**	·02227	**·45**	·06263	**·74**	·10300		
16	1·88332	**·17**	·02366	**·46**	·06493	**·75**	·10439		
17	1·74413	**·18**	·02505	**·47**	·06542	**·76**	·10578		
18	1·60494	**·19**	·02645	**·48**	·06681	**·77**	·10798		
19	1·46575	**·20**	·02784	**·49**	·06820	**·78**	·20851		
20	1·32656	**·21**	·02923	**·50**	·06959	**·79**	·10996		
21	1·18737	**·22**	·03063	**·51**	·07098	**·80**	·11135		
22	1·04818	**·23**	·03291	**·52**	·07238	**·81**	·11274		
23	0·90899	**·24**	·03340	**·53**	·07377	**·82**	·11413		
24	0·76980	**·25**	·03480	**·54**	·07516	**·83**	·11553		
25	0·63061	**·26**	·03619	**·55**	·07655	**·84**	·11692		
26	0·49142	**·27**	·03758	**·56**	·07795	**·85**	·11831		
27	0·35223	**·28**	·03897	**·57**	·07934	**·86**	·11970		
28	0·21304	**·29**	·04036	**·58**	·08073	**·87**	·12109		
29	0·07385								

Addendum. *Continued from page 9.*

III.—Required the ending moment of No. 17 Anuradha Nakshatra in June 484 A.D. (*see* Tables, p. 232).

		days.	☾'s Anom. days.
(Table X, p. 48). Ashadha New Moon, A.D. 484 ...	June	9·67	4·50 + 3·95
(Table XI-D, overleaf) Shortest Interval from Ashadha New Moon to No. 17 Anuradha Nakshatra		+10·74	+10·74
(Table XI-E, overleaf) Nak. correction for A.D. 484-85 is that corresponding to 24·39=0·41 *minus* ·02= ...		+ ·38	+ ·38
i.e.,	June	20·79	19·57
(Eye-Table) ☾'s tithi equation for Anom. of 19·57 days, reduced to Nakshatra Equation, is		+ ·38	
	June	21·17	

Our Nakshatra Anuradha (No. 17) ended on 21 June, A.D. 484, at ·17, *i.e.*, 10 ghat. after mean sunrise.

N.B.—In using the Eye-Table for Nakshatra and Yoga equations, we should first of all find the equation as if we were investigating a tithi, and then reduce the tithi equation to a Nakshatra or Yoga equation according to the scale furnished by the Eye-Table. We give another example to illustrate this.

IV.—Required the ending moment of Yoga Sukla (No. 24) in June 484 A.D. (*see* Tables, p. 232).

	days.	☉'s Anom. days.	☾'s Anom. days.	
(Table X, p. 48). Ashadha New Moon, A.D. 484 ...	June 9·67	24·39 +59·06	4·50 + 3·95	
(Table XI-D, overleaf). Shortest interval from Ashadha New Moon to No. 24 Yoga Sukla	+ 10·57	+10·57	+10·57	
(Table XI-E, overleaf). Yoga correction for A.D. 484-85 is that corresponding to an argument of 24·39 days, *i.e.* 0·77 *minus* ·05 ... ... =	+ 0·72	+0·72	+ 0·72	
	June 20·96	94·74	+19·74	
(Eye-Table) Sun's tithi equation for 94·74 days, is —·04d. This with sign reversed (for Yoga), and reduced to scale of Yoga equation, becomes ... ...+·03d.			+ 0·03	(☉'s Yoga Equation.)
(Eye-Table). Moon's tithi eqn. for 19·77 days is +·41d. This, reduced to scale of Yoga equation, becomes +·35d.			19·77	
Sum of Sun's and Moon's Yoga equations ... +·38	+ ·38			

Ending moment of our Yoga No. 24, Sukla, ... June 21·34=20½gh. after mean sunrise on 21 June, A.D. 484.

INDIAN CHRONOLOGY
(SOLAR, LUNAR AND PLANETARY)
B.C. 1 to A.D. 2000.

PART I.

Relations between Indian Astronomy and Indian Chronology.

N.B.—Decimal parts of a day may be converted into *ghatikas* and *palas* (*naligais* and *vinadis*) by means of Table XIX, and into *hours* and *minutes* by means of Table XX.

CHAPTER I.

THE SYNODICAL MONTH AND THE INDIAN SOLAR YEAR.

1. Astronomical Constants.—A regular treatise on astronomy always closes with a chapter on astronomical constants, *viz.*, those elements of calculation which are of use in predicting astronomical events. A book on astronomical computation, like the present one, must begin, not end, with astronomical constants.

2. First Astronomical Constant.—The Moon's Synodical Month or Lunation.—The first astronomical constant we have to know in Hindu astronomy is the moon's synodical month of 29½ days. The exact length of this period, according to the *Sûrya Siddhânta*,* which we shall always follow, except when otherwise stated, is 29·530587946 days. The ancient Hindu astronomers purposely calculated this period to what we should now call nine places of decimals in order that there might be no error even after thousands of years. The period fixed by modern astronomy does not differ from the above in the first six decimal places, and as ·0000008, the actual difference, is $\frac{7}{100}$ of a second, it follows that the difference between European and Indian astronomy in 5,000 years or 61,844 synodical months may amount to 4,260 seconds or a little over 1 hour and 11 minutes. We shall see, when we come to compute new moons, that, in practice, the difference between the European and the Indian computation of new moons is very much less. [*Vide* Sec. **118**, Rule (3) *infra.*]

3. What is a Synodical Month?—A synodical month or lunation is the interval between one new moon and another. You are apt to imagine that this is the period in which the moon travels once round the earth. It is not so. It is the period in which the moon gains one complete revolution over the apparent or visible motion of the sun: and as this is a most essential fact, which you should thoroughly understand in order to work any problem in Indian dates intelligently, we will spend some time in considering it.

The moment of new moon is the moment when sun and moon have the same longitude, *i.e.*, are at the same distance measured from a fixed point in the heavens. When once

* The Surya Siddhanta, the best known system of Indian astronomy, is believed to have been current in its present form since the 11th Century A.D. and is the standard for all India. Numerous other Siddhantas are extant, but only one of them, the First Arya Siddhanta, is referred to in the present work, in addition to the Surya Siddhanta.

this moment is past, the moon resumes her journey at the rate of, say, 13 degrees a day and the sun resumes his at the rate of one degree a day. It follows that the moon gains twelve degrees over the sun in a day and therefore she gains 360 degrees in about 30 days. All these figures of days are approximate, but they will enable us to picture to ourselves what takes place. The synodical month, then, is the period during which the moon gains 360 degrees over the sun, and its exact length is 29·530587946 days.

4. The Solar Year.—The next astronomical constant which we have to study is the solar year, the length of which, according to the *Sûrya Siddhânta*, is 365·258756484 days. You have probably heard that the length of the year, according to modern astronomy, is 365·2422408 days, that the Julian calendar made out the year to be 365·25 days, *i.e.*, .00776 of a day in excess of the correct figure; that to rectify this error, Pope Gregory in 1582 ordered the dropping out of 10 days and the British Parliament in 1752 * similarly dropped out 11 days, and that to avoid a recurrence of the error, we now drop out three leap years out of every hundred. You may be inclined to wonder that the Hindu astronomers adopted for their solar year a period which is not less than one ghaṭika in excess of the modern astronomical year. The year of 365·2422408 days is, however, a *tropical* year, whereas the Hindu astronomical year is an *anomalistic* † year, and we should really compare the Hindu year with the modern *anomalistic* year, which we seldom hear of in practice, but the correct length of which is 365·2596296 days, being an excess of ·001 day over the Hindu year. This no doubt makes a difference of several days in the course of four or five thousand years, but as the Hindu year is essentially lunar and not solar, not much practical inconvenience is caused by the difference.

Perhaps you would like to know the practical difference between a tropical and an anomalistic year. A tropical year is that which brings the *seasons* round at the same time of the year, whereas an anomalistic year is that which brings back the sun's *anomaly*, *i.e.*, the rate at which he moves round the earth. This rate varies according as the sun is near to, or removed from, his perigee, *i.e.*, the point when he is nearest the earth, and once a year the sun returns, as it were, to his old pace. Now this varying pace of the sun is very important for calculating the moment of new moon, as well as for calculating the moment of sunrise, and this is probably why the Hindu astronomers reckon the course of the sun by the anomalistic, instead of by the tropical, year.

5. The Decursus of the Hindu Solar Reckoning.—Hindu astronomers reckon the present chronology from the midnight between 17th and 18th February 3102 B.C., which is commonly called the beginning of *Kaliyuga*. On the morning of 18th February 3101 B.C., that is one year later, one complete Hindu solar year had run out by 6·13 a.m., *i.e.*, at ·25875 of the day. As however the Hindu day is always reckoned from sunrise, mean sunrise for the whole of India being at 6 a.m., the first year is reckoned to have been completed at 13 minutes (or exactly ·00876 of a day) Indian time of the day, on 18th February 3101 B.C. At this moment the year 1 of Hindu chronology began. You probably think it

* This was the occasion when the NEW STYLE (more fully explained in Ch. XXVI, Secs. **231** to **241**, "*Vara* or Week-day") was introduced.

† Strictly speaking, a *sidereal* year, but the designation *anomalistic* year is more suitable at this stage in order to lead up to the sun's *anomaly*.

was the year 2 which began on 18th February 3101 B.C., and not the year 1; but the Hindus generally reckon completed or expired years, and not current years, as the European calendar does; and this is another point which you should thoroughly understand. The first year of the Hindu chronology, which began on 18th February 3102 B.C., is, according to Hindu reckoning, the year 0. By adding 3101 to an English calendar year A.D. you can always arrive at the corresponding (expired) year of Kaliyuga. Thus the present year 1910 A.D. is K.Y. 5011. For a B.C. year, the K.Y. equivalent is obtained by subtracting it from 3102, not 3101.

6. Correspondence between A.D. and K.Y. years.—Tables VI, VII, and X exhibit in a very simple and intelligible manner the correspondence between A.D. and K.Y. years. Advantage is there taken of the fact that a century year A.D. corresponds to a century year K.Y. increased by 1. Thus 100 A.D. corresponds to 3201 K.Y., 1900 A.D. to 5001 K.Y., and so on.

If you reckon 365·258756484 days for every Hindu year, you will find that the commencement of 3101 K.Y. fell on 16th March, 1 B.C., at ·15379 of the day. The Hindu astronomers, however, have to drop 2·1706944 days out of this reckoning, because the Indian Solar Year 0 Kaliyuga really began 2·1707 days before the moment above assigned for its commencement. This dropping out or correction is called *Sodhya*,* and we shall meet with it again.

It thus happens that 3101 K.Y. commenced in 1 B.C. on 13th March at ·9831 of the day after mean sunrise (6 a.m.). From this point Tables VI, VII, and X will carry us on regularly through every year up to 2000 A.D.

CHAPTER II.

FIXING THE MOMENT OF MEAN NEW MOON.

7. At the first moment of K.Y. 0, according to the Sûrya Siddhânta, the sun and moon had the same mean longitude, that is, the moon was *new* at that instant. At the first moment of 1 K.Y., 365·258756484 days would have passed, that is 12 synodical months, and in addition 10·891701134 days. That is, at the first moment of K.Y. 1, the moon was not new as she was at the first moment of K.Y. 0, but she was 10·89170 days old: and the first mean new moon in K.Y. 1 occurred on 29·530587946 *minus* 10·891701134 days = 18·638886812 days after the commencement of K.Y. 1. In this way in every Hindu year the first mean new moon would occur 18·63889 days later than in the previous year. In the year K.Y. 2 a mean new moon occurred 2 × 18·63889 days = 37·27778 days later than the commencement of the year, but as this period exceeds a synodical month, the *first* mean new moon in K.Y. 2 really occurred 37·27778 *less* 29·53059, that is, 7·74719 days after the commencement of the year K.Y. 2. The day of occurrence of the first mean new moon in each successive year after 0 K.Y. is given in Table VII, and we see from that table that in 100 K.Y. the first mean new moon occurred 3·46164 days after the commencement of the year. We follow the table

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* The *Sodhya* should, properly speaking, be applied to every year, including year 0 Kaliyuga. The point should be borne in mind when calculating solar dates and tithis in any year. B.C. The nature of the correction called *Sodhya* is explained in Sec. 66.

through 200, 300, etc., years, till we find that in 3000 K.Y. the first mean new moon occurred 15·25746 days after the commencement of the solar year. For 3101 K.Y. (or 1 B.C.) we reckon the time of occurrence of the first mean new moon thus :—

	Days.
For 3000 years	15·25746
For 100 years	3·46164
For 1 year	18·63889
	37·35799
Deduct 1 completed synodical month ...	29·53059
Remainder ...	7·82740
Add the *Sodhya* which causes the solar year to commence 2·1707 days earlier than it does by mean computation (*vide* Sec. **66** *infra*)	+ 2·1707
Occurrence of first mean new moon in K.Y. 3101 (1 B.C.)	9·99810 days.

That is, in 1 B.C., the first mean new moon of the Hindu solar year occurred almost exactly 10 days (properly 10 days less ·0019 of a day) after the commencement of the solar year.

8. From 1 B.C. we can follow the occurrence of the first mean new moon in each successive year according to the Tables VI and VII, the figures in which have merely to be added up suitably for each year. Thus if we require the date of the first mean new moon in the current solar year K.Y. 5011, we proceed according to the tables :—

For K.Y. 5001, 16·70809 days. (Tab. VI).
For 10 years, 9·20534 „ (Tab. VII).

For K.Y. 5011, 25·91343 „

That is, the first mean new moon in the year A.D. 1910–11, K.Y. 5011, occurs 25·91343 days after the commencement of the solar year, and as the solar year itself commences, as we may see from other columns of the same tables, on Ap. 12·62041
+·58756

i.e., on April 13·20797

it follows that the addition of 25·91343 days, or 39·12140 days from 1 April, in other words 9·12140 days in May 1910, will give us the time of occurrence of the first mean new moon in K.Y. 5011. We may, if we like, convert the decimal places into *ghatikas* and *palas* or *hours* and *minutes*, according to Table XIX or XX, and we shall have as the result, 9th May 1910, 7 ghaṭikas and 17 palas or 2 hours and 55 minutes. This is the time of occurrence of *mean* new moon. About the *actual* ending moment of this or any other new moon tithi, we shall learn presently.

N.B.—For the meaning of *ghatika* and *palu*, See Sec. **130** *infra.*

CHAPTER III.

SUN'S AND MOON'S ANOMALY AND ACTUAL MOMENT OF NEW MOON.

9. We computed the time of occurrence of the first mean new moon in K.Y. 5011, and we arrived at the result, 7 ghaṭikas and 17 palas after mean sunrise on 9th May 1910. If now we look into a Panchângam, computed from the English Nautical Almanac, like Mr. Srauti's Tiruvâdi Panchângam or Messrs. Râghava Châri & Son's Nungumbaukam Panchângam, we shall find the time of occurrence of the new moon in May 1910 to be 9th May, 13 ghaṭikas and 2 palas after sunrise. It is encouraging that we are so near the Panchângam result, but we are not near enough. The Panchângams in question are calculated

for the latitude and longitude of Kumbakonam and Madras, respectively, whereas our calculation is for mean sunrise (6 a.m.) at the Equator on the meridian of Ujain, which is accepted by Hindu astronomers as a starting point in the same way as Greenwich is accepted by modern English astronomers. It is known that Madras time is 18 minutes or 45 palas in advance of Ujain time, and, further, sunrise at Madras on the 9th May 1910 is noted in the Panchângam as occurring 12 minutes or 30 palas before 6 a.m. These two circumstances account for a difference of 75 palas or 1 ghaṭika and 15 palas between our mean time and the Panchângam time, but there is still a difference of 4 ghaṭikas and 30 palas or ·0750 of a day to be accounted for.

10. We account for it thus. Although mean new moon occurs every 29·53059 days, the actual new moon does not recur at exactly this interval. About the time when the moon is due to become new, she may be fast, or she may be slow, and we have to take this circumstance into consideration. Hindu astronomers have devised a table of the moon's anomaly which enables us to calculate exactly by how many degrees the moon is in advance of, or behind, her mean position at new moon or at any other time. The original tables of the moon's anomaly and equation of the centre, as these constants are called, will be found in Professor Jacobi's standard article on the subject in Vol. I of the *Epigraphia Indica*. For the sake of practical convenience, we may convert the degrees into time and further calculate the anomaly for each ·001 of the equation, and the result will be our Table IX. This table shows us exactly what time should be added to or deducted from mean time in order to arrive at the actual moment of occurrence of new moon.

11. To use this table, you should know the moon's anomaly at the time you are dealing with, and the moon's anomaly is determined for centuries and odd years in the same way as the *mean* moment of the first new moon is determined for every solar year. The moon completes an anomalistic month, that is, returns to a particular pace round the earth in 27·5546 days, and in a solar year the moon's anomaly increases by 365·25875 less 13 × 27·5546 = 7·04896 days as shown in Table VII, Column 4. In 100 years the anomaly increases by 16·03078 days and we calculate, as before, the anomaly for the commencement of the solar year K.Y. 3101 (B.C. 1).

	Days.
For 3000 years ...	12·49527
For 100 years ...	16·03078
For 1 year ...	7·04896
For 3101 K.Y. ...	35·57501
Deduct one completed anomalistic month ...	27·5546
	8·02041

Add the moon's anomaly at the first instant of K.Y. 0, which, according to the Sûrya Siddhânta, was 90° from perigee or 6·8886 days,
and *deduct* Sodhya 2·1707 days, 4·7179

4·7179	12·73831 days.

12. The result, 12·7383 days, is just what we find entered in Table VI as the moon's anomaly at the commencement of K.Y. 3101 (B.C. 1). From this point we go on, year by year and century by century, till we reach 1600 A.D., when a correction, or *bija*, introduced by the

Hindu Astronomer Ganesa Daivajna, comes into operation. The effect of this *bija* is to raise the annual increase of the moon's anom. from 7·04896 d. to 7·04898 d. or by 2 seconds of time every year, and also to diminish the length of the anomalistic month from 27·5546 to 27·55459797 or ·000002 d., *i.e.*, $\frac{1}{5}$ of a second every month. As a result of this correction, the anomaly for the commencement of K.Y. 5011 (1910-11 A.D.) is 2·1759 days. As the first new moon in the same year occurs (*vide* Section 8 *supra*) on the 25·9134th day after the commencement of the year, the anomaly for the time of the first new moon is 25·9134

+ 2·1759

28·0893

Deduct completed anomalistic month—27·5546

·5347 of a day.

13. As new moon is the moment when the moon has gained exactly 360° over the sun, we have, in determining this moment as well as the moon's anomaly at this moment, to take account of the sun's pace as well as the moon's. The sun's pace depends on his position in the anomalistic year, and that we know (Sec. 4) is the Hindu solar year. We also know that at the time of occurrence of the first new moon in K.Y. 5011 the sun had advanced 25·9134 days in the anomalistic year. We simply look for the corresponding equation in the table of sun's anomaly (Table IX-*c*) and we find it to be midway between + ·145 and + ·144. We put down + ·1445 as the equation we require and *add* thereto ·5347, the moon's anomaly already found. Net moon's anomaly, ·6792.

We look in the table of moon's anomaly (Table IX-*a*) against ·679 of a day and we find the equation to be between —·059 and —·060. The actual anomaly entered in the table is ·677, and as our anomaly is ·679, we take a suitable equation by proportional parts, *i.e.*, ·0592.

We now *add* the total of sun's and moon's equations (+ ·1445 —·0592), or + ·0853 to the mean time already found, 9·1213* d., and obtain 9·2066, *i.e.*, 12 ghaṭikas 24 palas after mean sunrise on 9th May 1910. For the present we might be satisfied with this result, which agrees with sufficient closeness with that (13 ghaṭikas 2 palas) of the Nautical Almanac and the Panchângams based thereon; for if we add the effect of longitude and local sunrise, already adverted to in Section 9 *supra*, our local time for the ending moment of the new moon tithi will be 13 ghaṭikas 39 palas after sunrise.

14. The reasons for the various processes whereby we arrive at the actual ending moment of any tithi will be clear to us when we come to Chapter XXIII "Theory of anomalies and equations," but one word on the subject may perhaps be usefully said before we close this chapter. The reader will observe that each anomaly table in our Table IX is divided into four equal portions, two having additive equations and two subtractive. Each equation, as given in the table, consists of three decimal places, the first two being given in vertical columns and the third in a horizontal column. The horizontal column is not necessary when all we want to know is how many hours or how many ghaṭikas after sunrise a

* The reader should note that two fractions of the day are usually quoted for the moment of occurrence of any astronomical event, *tithi*, *nakshatra*, *yoga*, *karana*, etc. The first fraction (in this case ·9134) is part of a period of time reckoned from the beginning of the solar year, while the second fraction (in this case ·1213) is the time of the day, reckoned from mean Lanka sunrise, 6 a.m. The difference between the two fractions is (as will be seen from Sec. 8 *supra*) the fraction of day marking the commencement of the solar year, one of the data entered in Table X.

new moon or other tithi occurred, and consequently, the horizontal place of the equation, namely, its third decimal place, is omitted in the Eye-table at the end of the book. On the other hand, when such a course is necessary for very accurate work, a *fourth* figure may be added to the third shown in the horizontal column by noting the difference between two successive anomalies and taking a proportional part of the difference between the corresponding equations. Thus, supposing we want the equation for a ☾'s anomaly of 7·25 days: the anomalies and equations next to those we want are—

☾'s An. 7·077 d.	...	☾'s An. 7·275 d.	...	Diff. ·198 d.
Eqn. —·413 d.	...	Eq. —·414 d.	..	Diff. ·001 d.

Inasmuch as the difference in *anomaly* between 7·077 and 7·25 is ·173 which is $\frac{\cdot 173}{\cdot 198}$ =·9 of the tabular difference, we can *add* 9 to the lower *equation* and take ·4139 as the equation corresponding to ☾'s anomaly, 7·25 days.

We should note that sometimes the *lesser anomaly has the higher equation*. Thus, supposing we require the equation for ☾'s An. 20·375 d. We note the following as the nearest anomalies :

☾'s An. 20·210 d.	...	☾'s An. 20·577 d.	...	Diff. ·297 d.
Eqn. +·414 d.	...	Eqn. +·413 d.	...	Diff. ·001 d.

Our anomaly is lower than 20·577 by ·202, which is $\frac{\cdot 202}{\cdot 297}$= ·7 of the difference. We therefore *add* 7 as a fourth figure to the equation +·413 and take +·4137 as the equation we require.

In all cases we should add to, or subtract from, the equation *corresponding* to the anomaly from which we took the difference. In this case, if we had taken the difference from 20·280, it would have been ·095 and the proportional part $\frac{095}{\cdot 297}$=·3, which we should *deduct* from the fourth place of ·414. Thus our equation would be +·414 *minus* ·0003= +·4137, the same as before.

The same observations apply to solar anomalies.

15. For ordinary results, we do not require a fourth place in the equation, and we can take the nearest three place equation that we can find in Table IX and thus, by means of a simple sum in addition or subtraction, discover, without a moment's trouble, the actual from the mean moment of a tithi or nakshatra. Even then we shall be far more accurate than by any of the rough-and-ready methods now in use.

CHAPTER IV.

THE SOLAR MONTHS.

16. The solar months of the Indian calendar are named in Table II. The reader will note that the Tamil names of months are practically the same as the Bengal names, but that the first Bengal month *Vaisâkha* gives the name to the second Tamil month and so on, the last Bengal month *Chaitra* being the first Tamil month *Chittirai*.

Also, the Malayalam names of months are generally the same as the signs of the zodiac : the first two are called *Medam* and *Edavam* instead of *Mesham* and *Rishabham*.

But whether in the Tamil country or in Malabar or in Bengal, the measure of the solar months is the same. Like the solar year, each solar month ends at a *fraction of the day*, that is, at the moment when the next sankrânti takes place. For purposes of computation, the *sankrânti*, as well as the month to which it gives its name, is reckoned from the very

moment at which the previous month ends. But in practice in the Tamil country, when a sankrânti takes place after sunset, the next month begins next day; and when the sankrânti occurs before sunset, *that* is the first day of the next month, and the old month loses a day. We shall have occasion, when dealing with the use of the tables, to note some of the practical consequences of the working of this rule, and we shall mention at the same time the corresponding rules in other parts of India. (Secs. **144**, **145** *infra*.)

17. Note that the solar months in the Indian calendar, which have 30 days each, are placed at fairly regular intervals, and that the months with 31 days each, as also those with 29 days each, are arranged continuously. Thus the series is:

30 30
31 29
31 29
31 29
31 29
29
30

which is fairly symmetrical. Owing, however, to the working of the rule about *sankrântis* before and after sunset, a month may have occasionally an extra day, and solar months with 32 days are not infrequent, as we may see from Table XII. Any consequent confusion can always be avoided if you invariably determine *the fraction of day* at which a month ends and the next begins.

CHAPTER V.

THE LUNAR MONTHS IN RELATION TO SOLAR MONTHS

18. The lunar months are the *doors* to the Indian calendar, but the solar months are the *hinges* on which the doors move. Every lunar month takes its name in Bengal from the solar month *in* which it occurs, and in the Tamil country from the *next* solar month after that in which it occurs.

19. Thus the lunar Vaiśâkha *must* begin sometime in the solar Vaiśâkha (Bengal) or sometime in the solar *Chittirai* (Tamil). The lunar month being only 29·53 days in length, there may be two new moons between the beginning and end of a solar month, and in this case *both* receive the same name, the first being called *Adhika* and the second *Nija* or true. The second is called 'true' because it immediately precedes a sankrânti. *Adhika* months occur ordinarily once in three years, as may be seen from Tables X and XII.

20. More rarely, that is about once or twice a century, a lunar month may begin and end without a solar month beginning between, and then some lunar month must be suppressed as there is no hinge on which this particular door can turn. The suppressed lunar month is said to be *kshaya** or in defect.

21. We will now take three examples illustrating the different kinds of lunar years: (1) a year consisting of twelve lunar months, corresponding to as many solar months; (2) a year consisting of thirteen lunar months, which will include an *adhika*, *i.e.*, an extra or *intercalary* lunar month; (3) a year of thirteen lunar months, exhibiting two intercalary or *adhika* lunar months and one suppressed or *kshaya* lunar month.

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* Beginners find great difficulty in understanding *adhika* and *kshaya* months, because the idea is so utterly unlike anything in any other calendar; but the examples given on the next and following pages will enable the reader to cross safely over this *pons asinorum* of the Indian calendar.

SCHEME OF MONTHS IN K.Y. 5011, A.D. 1910-11.

Lunar Months ...	A.D. Date and Fraction of Day of mean New Moon.	Day and Fraction of Day of Solar Year when mean New Moon occurs, also Sun's Anomaly for New Moon.	Day and Fraction of day of Solar Year when Sankranti occurs: names of Solar Months commencing at each sankranti. S.M. = SOLAR MONTH	Moon's Anomaly at moment of each mean New Moon. (To the ☾'s An. at first new moon of Solar Year add 1·976 days for each lunar month)
	A.D. 1910. Indian Solar Year commences Ap. 13·2080. (Tab. X, p. 126.)		**K.Y. 5011.** Mesha sankranti Vaisakha S.M. ; Chittirai and Medam S.M. ; solar year begins.	
1. **Vaisakha** ...	May 9·1214.	25·9134 (Tab. X.)	30·9353. Vrishabha sank. Jyeshta S.M. ; Vaikasi or Edavam S.M.	0·634 (Table X.)
2. **Jyeshta** ...	June 7·6520.	55·4440	62·3555. Mithuna sank. Ashada S.M. ; Ani S.M.	2·510
3. **Ashada** ...	July 7·1826.	84·9746	94·0003. Karkata sank. Sravana S.M. ; Adi S.M.	4·486
4. **Sravana** ...	Aug. 5·7132.	114·5052	125·4755. Simha sank. Bhadrapada S.M. ; Avani S.M.	6·462
5. **Bhadrapada.**	Sep. 4·2437.	144·0357	156·4942. Kanya sank. Asvina S.M. ; Purattasi S.M.	8·438
6. **Asvina** ...	Oct. 3·7743.	173·5663	186·9355. Tula sank. Kartika S.M. (Beng.); Aippasi S.M.	10·414
7. **Karttika** ...	Nov. 2·3049.	203·0969	216·8289. Vrischika sank. Margasira S.M ; Kartigai S.M.	12·390
8. **Margasira** ...	Dec. 1·8355.	232·6275	246·3192. Dhanus sank. Pausha S.M. ; Margali S.M.	14·366
9. **Pausha** ...	Dec. 31·3661.	262·1581	275·6369. Makara sank. Magha S.M. ; Tai S.M.	16·342
	A.D. 1911.			
10. **Magha** ...	Jan. 29·8967.	291·6887	305·0850. Kumbha sank. Phalguna S.M. ; Masi S.M.	18·318
11. **Phalguna** ...	Feb. 28·4273.	321·2193	334·9053. Mina sank. Chaitra S.M. ; Panguni S.M.	20 294
12. **Chaitra** ...	Mar. 29·9579.	350·7499	365·2587. Mesha sank. Vaisakha S.M. ; Chittirai S.M.	22·270

N.B.—The main point to which the reader's attention should be directed is that the lunar month following a new moon has its name determined by its occurring *before* a particular sankranti. Thus, a lunar month commencing at any time between 0 day of the solar year and the 30·9353rd day is called **Vaisakha**; similarly, a lunar month commencing at any time between 156·4942 days and 186·9355 days of the solar year is called **Asvina** and so forth. The lunar month commencing before the Mesha Sankranti is called **Chaitra**

22. For the first we shall select the current Indian year K.Y. 5011, A.D. 1910-11; for the second we shall select last year, K.Y. 5010, A.D. 1909-10; and for the third, because there has been no suppressed month since A.D. 1822, and there will be none again till A.D. 1963, we will select the very first year of our chronology, K.Y. 3101, B.C. 1.

23. The solar year K.Y. 5011, A.D. 1910, which is a normal year, opens, as every year does, with the *Mesha Sankrânti* or entrance of the sun into the Indian *first point of Aries*, from which our celestial longitudes are reckoned. We have already seen how this moment is determined, namely, by the successive addition of 365·25875 days since the first moment of the year 0 *Kaliyuga*, less the *sodhya* of 2·1707 days. The *Mesha Sankrânti* determines all kinds of solar years in use in India, and it also determines directly the lunar year, since the first lunar month *Chaitra* is defined to be that whose commencement precedes the Mesha Sankrânti and the first day of the lunar year is that on which *Chaitra Sukla Pratipadâ* or the first tithi of the bright fortnight of Chaitra was current at sunrise. In our scheme of months in Table X and elsewhere the reader will observe that the lunar month *Chaitra* stands last, but this is only for purposes of computation, and, after all, the lunar month *Chaitra* begins in a previous solar year, and so it stands last among the lunar months of that year.

The moment of the *Mesha Sankrânti* marks the commencement of the solar month *Vaisâkhâ* in Bengal, of the solar month *Chittirai* in the Tamil country, and of the solar month *Medam* in Malabar, Travancore, and Cochin.

Each month begins and ends with a sankrânti, and the second and other sankrântis are named in the order of the signs of the zodiac, *Vrishabha, Mithuna, etc.*

24. There is no difficulty about the lunar months in A.D. 1910-11, since the new moons and sankrântis occur *alternately*, each *door* having its own *hinge* to turn on. If you like to calculate the actual moment of occurrence of each new moon, it will be a useful exercise for you to do so, and you can use the anomalies noted in columns 2 and 4.

SCHEME OF MONTHS IN THE YEAR A.D 1909-10, K.Y. 5010.

Lunar Months ...	A.D. Date and Fraction of Day of mean New Moon.	Day and Fraction of Day of Solar Year when mean New Moon occurs, also Sun's Anomaly for New Moon.	Day and Fraction of Day of Solar Year when sankranti occurs; names of Solar Months commencing at each sankranti. S.M.=SOLAR MONTH.	Moon's Anomaly at moment of each mean New Moon. [See this col. on p.(9).]	Sum of Sun's and Moon's equations (by Table IX *a* to *o*).
	A.D. 1909. Indian Solar Year commences. Ap. 12·2492 (Tab. X).	29·530588	**K.Y. 5010.** Mesha sankranti Vaisakha S.M.; Chittirai or Medam S.M. Solar Year begins.	41·976 27·5546	
1. Vaisakha ...	Ap. 20·2238	7·2745 (Tab. X).	30·9353. Vrishabha sank. Jyeshta S.M.; Vaikasi or Edavam S.M.	2·401(Tab.X)	
2. Jyeshta ...	May 19·7543.	36·8051.	62·3555. Mithuna sank. Ashada S. M.; Ani S.M.	4·377.	

SCHEME OF MONTHS IN THE YEAR A.D 1909-10, K.Y. 5010.

Lunar Months ...	A.D. Date and Fraction of Day of mean New Moon.	Day and Fraction of Day of Solar Year when mean New Moon occurs, also Sun's Anomaly for New Moon.	Day and Fraction of Day of Solar Year when sankranti occurs, names of Solar Months commencing at each sankranti. S.M.=SOLAR MONTH.	Moon's Anomaly at moment of each mean New Moon.	Sum of Sun's and Moon's equation (by Table IX *a* to *e*).
	A.D. 1909.		**K.Y. 5010.**		
3. **Ashada** ...	June 18·2849	66·3357	94·0003. Karkata sankranti Sravana S.M.; Adi S.M.	6·353	
4. } **Sravana**	July 17·8155	95·8663	125·4755. Simha sank. Bhadrapada S.M.; Avani S.M.	8·329	
5. }	Aug. 16·3461	125·3970 — ·4470 *124·9500		10·305 — ·1253(⊙'s Eq.) 10·180	— ·1253 — ·3217 — ·4470
6. **Bhadrapada.**	Sep. 14·8767	154·9275	156·4942. Kanya sank. Asvina S.M.; Purattasi S.M.	12·281	
7. **Asvina** ...	Oct. 14·4073	184·4581	186·9355. Tula sank. Karttika S.M. (Beng.); Aippasi S.M. (Tam.).	14·257	
8. **Karttika** ...	Nov. 12·9379	213·9886	216·8289. Vrischaka sank. Margasira S.M.; Kartigai S.M. (Tam.).	16·233	
9. **Margasira** ...	Dec. 12·4685	243·5192	246·3192. Dhanus sank. Pausha S.M.; Margali S.M.	18·209	
	A.D. 1910.				
10. **Pausha** ...	Jan. 10·9990	273·0498	275·6369. Makara sank. Magha S.M.; Tai. S.M.	20·185	
11. **Magha** ...	Feb. 9·5296	302·5804	305·0850. Kumbha sank. Phalguna S.M.; Masi S.M.	22·161	
12. **Phalguna** ...	Mar. 11·0602	332·1110	334·9053. Mina sank. Chaitra S.M.; Panguni S.M.	24·137	
13. **Chaitra** ...	Ap. 9·5908	361·6416	365·2587. Mesha sank. Vaisakha S.M.; Chittirai S.M.	26·113	

25. In this year, as in 1910-11, the lunar months, up to Śrâvana, alternate with the solar months; but between the *Sankrântis* due at 94·30003 d. and 125·4755 d. of the solar year, we have two mean new moons at 95·8663 d. and 125·3970 d., respectively. We may satisfy ourselves by computation of the anomalies, as shown above, that the second new moon really precedes the sankrânti at 125·4755 d. In such a case both the new moons receive the same name (here *Srâvana*), and the first is called *Adhika Srâvana*, the second *Nija Srâvana*. After this, the numerical order of the lunar months is disturbed, for the 6th new moon is called Bhâdrapada, whereas in 1910-11, the 5th is Bhâdrapada, and the remaining new moons, including Bhâdrapada, alternate with the remaining sankrântis, the total number of new moons for the year being 13 instead of 12.

We now pass to the third example.

* Actual moment of occurrence of new moon after allowing for solar and lunar anomaly.

SCHEME OF MONTHS FOR 1 B.C., K.Y. 3101.

Lunar Months ...	Date of mean New Moon by Christian era and fraction of day.	Day of Solar Year when mean New Moon occurs; also Sun's anomaly.	Day of Solar Year when sankranti occurs, also dates of commencement and end of Solar Months. S.M.=Solar Month.	Moon's anomaly at moment of New Moon.	Sun's and Moon's equations (by Table IX *a* to *c*).
	1. B.C. Indian Solar Year commences Mar. 13·9831 (Table X, page **24**).		**K.Y. 3101.** Mesha sankranti Vaisakha S.M.; Chittirai or Madam S.M.		
1. Vaisakha ...	Mar. 23·98	9·99810	30·93523. Vrishabha sank. Jyeshta S. M.; Vaikasi or Edavam S.M.	22·736	
2. Jyeshta ...	Apr. 22·51	39·52869	62·3555. Mithuna sank. Ashada S.M.; Ani S.M.	24·712	
3. Ashada ...	May 22·04	69·05928	94·0003. Karkata sank. Sravana S.M.; Adi S.M.	26·688	
4. Sravana ...	June 20·57	98·58986	125·4755. Simha sank. Bhadrapada S.M.; Avani S.M.	1·109	
5. Bhadrapada.	July 20·10	128·12045	156·4942. Kanya sank. Asvina S.M.; Purattasi S.M.	3·085	
6. } 7. } Asvina	Aug. 18·63 Sep. 17·16	157·65104 187·18163 — ·5844 *186·5972	186·9355. Tula sank. Karttika S.M.; Aippasi S.M.	5·061 7·037 — ·1724 6·865	—·1724 } —·4120 } —·5844
8. Karttika ...	Oct. 16·69	216·71221 — ·5143 *216.1979	216·8289. Vrischika sank. Margasira S.M; Kartigai (Tam.) S.M.	9·013 —·1288 8·884	—·1288 } —·3855 } —·5143
9. Margasira ...	Nov. 15·23	246·24280 — ·3212 *245·9216	246·3192. Dhanus sank. Pausha S.M.; Margali S.M.	10·989 — ·0522 10·937	—·0522 } —·2690 } —·3212
Pausha ...	**(Kshaya)**		275·6369. Makara sank. Magha S.M.; Tai S.M.		
10. Magha ...	Dec. 14·176 **1 A.D.**	275·77339 — ·0414 *275·7319	305·0850. Kumbha sank. Phalguna S.M.; Masi S.M.	2·965 + ·0391 13·004	+·0391 } —·0805 } —·0414
11. Phalguna ...	Jan. 13·29	305·30398 + ·2501 305·5540	334·9053. Mina sank. Chaitra S.M.; Panguni S.M.	14·941 + ·1193 15·060	+·1193 } +·1308 } +·2501
12. } 13. } Chaitra	Feb. 11·82 Mar. 13·35	334·83457 *+·4710 335·3055 364·36515	365·2587. Mesha sank. Vaisakha S.M.; Chittrai or Medam S.M.	16·917 + ·1685 17·085 18·893	+·1685 } +·3025 } +·4710

* Day and fraction of day, marking exact moment of actual New Moon, after allowing for anomaly.

26 In this year there is nothing specially worthy of note till we reach *Asvina:* but for that month there is an *Adhika Asvina* just as we had an *Adhika Srâvana* in A.D. 1909. There is a peculiarity about *Nija Asvina* in the year B.C.1, which we must note carefully. The mean *Nija Asvina* at 187·1816 days is not before the sankrânti at 186·9355 days, but the actual new moon, after calculation of anomalies, is found to be before 187·1816 days and is therefore *Nija Asvina*, not Kârttika. Generally speaking, when a *nija* or *adhika* month is within ·6 day on either side of a sankrânti, calculation, or at least a consideration, of the anomalies is necessary before we can determine its true character.

27. Passing Âśvina, in the year 1 B.C., we find that each of the subsequent mean new moons is within ·6 day of a sankrânti, and we must therefore calculate the anomalies in order to be quite sure whether each new moon is on this or that side of a sankrânti. Having made these calculations, we find that between two sankrântis at 246·3192 d. and 275·6369 d. there is no new moon, although there is a new moon just under six ghaṭikas (·095 d.) *after* the second sankrânti. Had this new moon preceded the sankrânti ever so little, instead of following it, or had our method been inaccurate at this stage to the extent of 2 hours, the consequences we are about to state would not have followed. As it is, there is no new moon between the two sankrântis at 246·3192 d. and 275·6369 d., and therefore the lunar month which has no hinge to turn on is shut; this fact is expressed by saying that *Pausha* lunar month is *kshaya* or suppressed.

28. How do we know that the lunar month to be suppressed is *Pausha* and not any other? Because that is the first new moon which we are unable to place *before* a sankrânti. We find that *Mâgha* and *Phâlguna* are each followed by a sankrânti, though a long way off, and between the sankrântis at 334·9053 d. and 365·2587 d. there are again two new moons, that is to say Chaitras, the first of these being *adhika* and the second *nija*. Here also we note that appearances are deceptive, for the mean new moon at 334·8346 is apparently a Phâlguna, but the calculation of the anomalies shows it to be an *adhika Chaitra*.

29. Generally, (1) a *kshaya* month is preceded and followed, though not immediately, by an *adhika* month; (2) there are, as a rule, only one or two *kshaya* months in a century; (3) the *kshaya* months must be calculated from the mean moment by means of anomalies before we can prove them to be *kshaya;* and (4) only one of three months, Mârgasira, Pausha, and Mâgha, can be *kshaya*, because these are the three lunar months which turn on solar months of 29 days each.

The following table enables us to know an *adhika* month or a *kshaya* month by mere inspection of the date of occurrence of the first new moon in a solar year:—

Names of Lunar Months.	Ending moments of Solar Months.	Periods of Lunar Months.	Limits of Adhika and Kshaya Months.
			The lunar month noted in column I will be an *adhika* month if first New Moon in Solar Year occurs
Vaisakha ...	30·93528 d.	29·53059 d.	before 1·40469 d.
Jyeshta ...	62·35555 d.	59·06117 d.	„ 3·29438 d.

Names of Lunar Months.		Ending Days of Solar Months.	Periods of Lunar Months.	Limits of Adhika and Kshaya Months.
				The lunar month noted in column I will be *adhika* if first New Moon in Solar Year occurs
Ashada	...	94·00028 d.	88·59176 d.	before 5·40851 d.
Sravana	...	125·47555 d.	118·12235 d.	" 7·35320 d.
Bhadrapada	...	156·49417 d.	147·65293 d.	" 8·84122 d.
Asvina	...	186·93555 d.	177·18353 d.	" 9·75201 d.
Karttika	...	216·82888 d.	206·71411 d.	" 10·11475 d.
				The lunar month noted in column I will be *kshaya* if first New moon in Solar year occurs
Margasira	...	246·31916 d.	236·24470 d.	after 10·07446 d. and before 10·11475 d.
Pausha	...	275·63694 d.	265·77529 d.	after 9·86164 d. and before 10·07447 d.
Magha	...	305·08499 d.	295·30588 d.	after 9·77910 d. and before 9·86164 d.
				The lunar month noted in column I will be *adhika* if first new moon in solar year occurs
Phalguna	...	334·90527 d.	324·83647 d.	after 9·77912 d. and before 10·06880 d.
Chaitra	...	365·25875 d.	354·36705 d.	after 10·06880 d. and before 10·89170 d.

N.B.—All the figures in column 4 are obtained by subtracting the corresponding figures in column 3 from those in column 2.

30. We see that if the first new moon in a solar year occurs before 1·40469 days (the difference between 30·93528 and 29·53059) of the solar year, there will be a second new moon before the end of the first solar month. Reasoning in the same manner, we see that if the first new moon in a solar year occurs after 1·40469 days, but before 3·29438 days of the solar year, there will be two new moons between the commencement of the first and second solar months, that is, there will be an *Adhika* as well as a *Nija Jyeshtha.* Similar reasoning will enable us to connect the possibility of occurrence of the several *adhika* and *kshaya* months with the occurrence of the first new moon before or between the days mentioned in the fourth column. It will be a useful exercise for the reader to try and reason out for himself each line of this table. For determining *mean* intercalations and *mean* suppression, the table can be used as it stands ; and taken with suitable anomalies, it is a safe and reliable guide for ascertaining true *adhika* and true *kshaya* months. We believe that this is the first time that so simple a method has been announced for recognizing *adhika* and *kshaya* months.

TITHIS.

31. Tithis are in use over the whole of India for religious purposes and over the greater part of it for civil purposes also. To understand *tithis* thoroughly is to have mastered the system of Hindu chronology. Hence " Tithis " take the lead in the second title of this work.

32. A lunation or synodical month is divided into thirty tithis or lunar days of equal mean length. The names of tithis are familiar to all Hindus, but they are given for convenience of reference on the same page as Table II. The first fifteen tithis, corresponding to the bright half of the month, are called *Sukla paksha ;* and the second fifteen are called *Krishna paksha* or *Bahula paksha.* The last or 30th tithi is new moon or Amâvâsyâ, and it is

called sometimes by the name of the month of which it marks the end, and sometimes by the name of the following month. Thus the moment of Amâvâsyâ, which marks the beginning of Vaiśâkha and which in this work is invariably called the "Vaiśâkha new moon" is the same as the ending moment of the 30th tithi of Chaitra. In an inscription* "Vaiśâkha Amâvâsyâ" often means the Amâvâsyâ at the *end* of Vaiśâkha, but for convenience of computation, the first new moon in the solar year is in this work called the Vaiśâkha new moon, while the 30th tithi of Vaiśâkha is called the Jyeshṭha new moon, and so on with the rest of the lunar months. (See remarks by Dr. Thibout, *Indian Antiq.*, Ap. 1895, p. 88.)

33. To find the mean ending moment of a particular *tithi*, all you have to do is to add the corresponding duration in days, according to either Table II or the Eye-table, to the moment of the previous new moon.

Thus, to find the mean ending moment of the 18th tithi of Mâgha lunar month, called *krishna* or *badi* (contraction for *bahula divasa*) *Tritiya* in K.Y. 5010, A.D. 1909-10, we proceed as follows:—

Mâgha new moon, A.D. 1910 (Table X) ...	February	9·5296 d.
Duration of 18 tithis (Table II or Eye-table) ...		17·7183 d.
Mâgha 3 *badi*, *i.e.*, end of 18th tithi ...	February	27·2479 d.

The *mean* tithi in question ended at ·2479 of the 27th day of February, A.D. 1910.

34. For the *actual* ending moment of the tithi, we add the equations of sun's and moon's anomalies.

	Anomaly at new moon. ☉	☾			
	302·58 d.	22·161 d.	A.D. 1910, February		27·2479 d.
Add for 18 tithis	17·72 d.	17·718 d.	☉Eq. for 320·30 d = + ·1491 d.		
			☾Eq. for 12·473 d = — ·1332 d.		
	320·30 d.	39·879 d.			
Deduct		27·555 (1 anom. month.)		+ ·0159 d.	+ ·0159 d.
		12·324 d.			27·2638 d.
		+ ·1491 (☉'s equation.)			
		12·473			

27·2638 d. or, in ghaṭikas and palas, 15 ghaṭikas 50 palas after mean sunrise on 27th February 1910. This is the absolute ending moment of Magha *badi* 3, in K.Y. 5010.

CHAPTER VI.

NAKSHATRAS.

35. The system of quoting dates by Nakshatras is as old as that of quoting by tithis and has prevailed in India from equally ancient times. There are twenty-seven nakshatras or lunar mansions through which the moon passes in her monthly journey

* That is, on the *amanta* system or the system of reckoning lunar months from New Moon to New Moon. There is also another system, prevalent in certain parts of India, of reckoning the lunar months from Full Moon to Full Moon, hence called the *purnimanta* system. On this system, which in all probability was more widely current formerly than it is now, the New Moon is at the middle of a lunar month and the two halves of each month are properly designated its two *pakshas* or wings, one on either side of new moon. Also, the new moon at the end of the amanta Chaitra lunar month, for instance, would, on the *purnimanta* system, be properly called the "Vaisakha new moon." As explained elsewhere, it is sometimes a difficult question whether a lunar month, referred to in an inscription, is to be understood in the *amanta* or in the *purnimanta* sense. See Sections **107** to **111** *infra*.

through the stars. For purposes of astronomical computation, the moon is supposed to spend an equal amount of time in each of the 27 nakshatras ; and as the total period of the moon's journey through the stars occupies 27·32166 days, it follows that the mean duration of each nakshatra is $\frac{27·32166}{27}$ =1·01191 days, *i.e.*, 1 day and nearly 18 minutes. Thus, if we know the ending moment of a particular nakshatra, all we have to do to find out the ending moment of the next nakshatra, or, for that matter, of any other nakshatra, is to add as many times 1·0119 days as there are nakshatras between the ending moment which we know and the ending moment which we wish to find out. Having found this ending moment, we have next to add or subtract the moon's equation of time according to her anomaly at the ending moment of the nakshatra. We should remember that the sun's anomaly and the sun's equation of time do not enter into the calculation of the ending moment of nakshatras, because we are now concerned with the moon's own journey among the stars and not with the space gained by her over the sun.

36. When all we wish to know is the nakshatra for a particular tithi we may ascertain this directly from the mean tithi. The mean tithi, as we know, gives us the moon's longitude *minus* the sun's longitude. If to any tithi, therefore, we add the sun's longitude, we shall get the moon's longitude and this will enable us to find out the nakshatra corresponding to the longitude. The sun's longitude for nakshatras for every whole day of the solar year is given in the last column of the calendar (Table VIII); while the sun's longitude for decimals of a day is given in Table V. (The process of determining the sun's longitude for the purpose of nakshatras consists, briefly, in making 360° equal to 29·53059 day-spaces, and allowing for the *sodhya* of 2·1707 days. This conversion is necessary in order that we may add the moon's *less* the sun's longitude, which is calculated at the rate of 360° for 29·53059 days, to the sun's own longitude). To give an example, supposing we wish to find the nakshatra corresponding to the 27th day of February, A.D. 1910, which we found was the 18th tithi of lunar Mâgha, ending at ·2487 of the day, after sunrise, we proceed to determine the sun's longitude for the nakshatra. From the tithi we know that the sun's longitude for solar anomaly for the tithi is 320·30 days. The corresponding sun's longitude for nakshatra is as follows :—

For 320 days (according to Table VIII)	25·6960	days.
For ·30 day (according to Table V)	·0242	„
Add moon's *less* the sun's longitude, *i.e.*, the equivalent of 18 tithis in days	17·7183	„
	43·4385	
Deduct the equivalent of 360° of the moon's longitude	29·5306	
	13·9079	

We look in Table III for the nakshatra equivalent of 13·9079 days in lunation space. We find this to be number 13, whose longitude extends from 13·12470 to 14·21843. Now, No. 13 nakshatra is called *Hasta*, which is therefore the nakshatra current at the ending moment of our tithi.

37. When we wish to find the *current* nakshatra corresponding to a tithi, the above method may be varied by converting the tithi into degrees at the rate of 12° for each tithi and adding the sun's longitude from Table XVII A and C, as in the example in Sec. **287**.

38. When we wish to find the *ending moment* of a nakshatra, the following method is preferable. This method, which is very simple, is indicated in Table XI which is provided in ghaṭikas and palas as well as in decimals of a day. To use this table, we should know the number of the nakshatra and the number of the new moon which the nakshatra follows, *i.e.*, whether it is the 1st, 2nd, 3rd, or 4th new moon, and so on, and then under the new moon in question we look out the "interval" opposite the number of the given nakshatra. The next step is to deduct from the interval so found the equivalent (according to the Correction Table in Table XI) of the time of occurrence of the first new moon in the Solar Year (given in Table X). The result, added to the date of the New Moon, gives us the mean ending moment of the nakshatra. If we wish to have the absolute ending moment, we take the equation for the nakshatra (Table IX *j* to *l*) corresponding to the moon's anomaly, and if we wish further to have the absolute ending moment in local time, we add or subtract the corrections according to Table XIII for the given latitude and longitude.

39. Suppose we want the ending moment of Nakshatra Mûla in Lunar Kârttika A.D. 1910, we proceed as follows :—

		Days.	☾'s Anomaly Days.
First New Moon in Solar Year (Table X) ...		25·9134	0·535
Add for Kârttika New Moon (") ...		177·1835	11·856
Add commencement of Solar Year (") ...		April 13·2080	
Days from April 1 A.D. 1909 ...		216·3049	
"Interval" corresponding to No. 19 "Mûla" Nakshatra under Kârttika (No. 7 New Moon)—Table XI	Days. 6·1353		
Deduct equivalent of 25·9134 according to the correction table in Table XI.			

		Days.
Equivalent of	25	=1·8700
"	·91	= ·0681
"	·0034	= ·0002
"	25·9134	=1·9383

" 25·9134 =1·9383	−1·9383		
	+ 4·1970	+ 4·1970	+ 4·197
Days from April 1 ...		220·5019	16·588
Nakshatra equation (Table IX-*k*) for anomaly of 16·588 days is + ·2465		+ ·2465	
		220·7484 days from Ap. 1.	

3

That is (by Tables VIII and XIX) 44 ghaṭikas 54 palas after mean sunrise on 6th November, A.D. 1910.

N.B.—For the years A.D. 1840 to A.D. 1919 we can get the ending moment of any Nakshatra yet more quickly from Tables XI and XII in the following manner :—

	d.	gh.	p.	days	gh.	palas.		d.	gh.	p.
(Table XII) Kârttika New Moon 1910, November				2	18	18	☾'s Anom.	12	23	28
Nak. interval No. 19 (Table XI—A, col. VII)	6	8	7							
Deduct for Nak. 1910-11 (Table XII, last col.)	—1	56	18							
	4	11	49	4	11	49		4	11	49
				6	30	7		16	35	17
Nak. Equation for ☾'s Anom. of 16 d. 35 gh. 17 p. (Table IX-*l*)				+	14	50				
				6	44	57				

The ending moment is Nov. 6, 44 ghaṭikas 57 palas after Ujain sunrise, which only differs by 3 palas from the result above arrived at.

42. If we want this in local time, say at Tanjore (Lat. 11°) we have to add as correction, according to Table XIII [Lat. 11° (Tanjore)—208th day of Hinḍu Solar Year, on 6th Nov., when the Solar Year commences on 13 April] + 994 seconds of time = 41 palas.

44 ghaṭikas 54 palas + 41 palas = **45** ghatikas **35** palas, after sunrise at Tanjore on **6th November, A.D. 1910.**

This is the absolute ending moment of "Mûla" Nakshatra in Lunar Kârttika, A.D. 1910 (Kaliyuga 5011), according to the *Surya Siddhânta.* According to Mr. Srauti's Panchângam, which is based on the Greenwich Nautical Almanac, the absolute ending moment is 52 ghaṭikas 24 palas and according to the Kanjanur "Panchângam (No. 28)" it is 47 ghaṭikas 16 palas.

43. Suppose that in the same month we required to know the ending moment of No. 13 "Hasta" Nakshatra, instead of No. 19 "Mûla", we would have to take the "Interval" in Table XI for No. 13 and deduct therefrom the equivalent of 25·9134, *i.e.*, 1·9383, *which is the same for all months and all nakshatras throughout the Solar Year* 1910 *A.D.* Against No. 13 under the 7th New Moon in Table XI there are two "Intervals", *i.e.*, 0·0638 and 27·3854. We take the second interval as we cannot deduct 1·9383 from the first interval.

Nakshatra Interval.	Days.	☾'s Anomaly.
		0·535
27·3854	216·3049	11·856
−1·9383 (Annual Nak. Corrn.)		
25·4471	+25·4471	+25·447
	241·7520	37·838
		−27·555 (1 an. month.)
		10·283
Nakshatra equation for ☾'s anom. of 10·283 days (Tab. IX—*J*.)	−·2915	
	241·4605 days from 1st April, *i.e.*,	

(by Tables VIII and XIX) 27 ghatikas 38 palas after *mean* sunrise on 27th November, A.D. 1910.

44. Lastly, if we want the ending moment of No. 15 "Svâti" Nakshatra in the same month, we find two "intervals" for No. 15 in Table XI, from each of which 1·9383 can be deducted. In other words, there will be two "Svâti's" in Lunar Kârttika 1910; one about 2·08 *minus* 1·94 or at ·14 of a day after new moon and the other at 29·41 *minus* 1·94 or 27·47 days after new moon. The equation for the mean anomaly of the first Svâti will be that for an anomaly of 0·53 + 11·86 + ·14 = 12·53 days; in this case the equation is − ·118. The absolute ending moment of the first Svâti will be ·305 + ·14 − ·118 = ·327 or 19¾ ghaṭikas after *mean* sunrise on the new moon day, *i.e.*, the 216th from 1st April, or 2nd November, A.D. 1910.

The equation for the ☾'s mean anomaly at the ending moment of the second Svâti will be that for (0·53 + 11·86 + 27·47 − 27·55) = 12·31 days; that is, by Table IX-*j*, the equation will be − ·138.

The absolute ending moment of the second Svâti will then be

$$
\begin{array}{rr}
 & 216{\cdot}3049 \\
27{\cdot}47 - {\cdot}138 \; = & +\,27{\cdot}332 \\
\hline
 & 243{\cdot}6369 \text{ days from April 1,}
\end{array}
$$

i.e., (by Tables VIII and XIX) 38¼ ghaṭikas on 29th November, A.D. 1910.

This is midway between Mr. Srauti's time (36¾ ghaṭikas) and the "Kanjanur" time (41 ghaṭikas) for the nakshatra in question.

N.B.—We have not corrected our result for local time.

45. Besides the system of the division of the moon's path among the stars into 27 equal nakshatra spaces, there are two others, called Garga's system and Brahma's system, by which the sidereal month of 27·32166 days is divided into 27 convenient but *unequal* stages. Our Table III gives the collective duration of the nakshatras according to the unequal systems, and the ending moment of each nakshatra according to either of these systems can be found by adding the corresponding collective duration to the ending moment of the last Nakshatra Revatî, which should be first determined. We have also given in Table III the [illegible]s of the deities presiding over the several nakshatras.

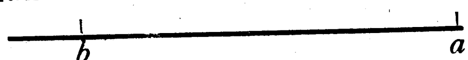
46. It is sometimes found that an extra Nakshatra *Abhijit* is interpolated between Nos. 21 and 22. Its duration is shown in Table III in the column dealing with "Brahma's System".

CHAPTER VII.

YOGAS.

47. A yoga is the time during which the sun and moon together accomplish 13 degrees 20 minutes of space. There are thus 27 yogas which together make 360°. The names of all the yogas are given in Table III, from which it will be seen that the collective duration of 27 yogas is 25·42022 days.

48. Unlike tithis and nakshatras, the yogas do not represent the stages of the actual motion of any heavenly body or of a set of heavenly bodies. They are thus the result of a mathematical rather than of an astronomical conception. If we draw a line



where *a* represents the motion of the moon in a given time and *b* the motion of the sun in the same time, it follows that *a*—*b* is the moon's elongation or the space gained by the

moon over the sun in the given time. If we regard separately the spaces travelled by the sun and the moon in this time, we might say that together they have done $a+b$. This $a+b$, then, is the yoga, while $a-b$ is the tithi. To derive the yoga from the tithi, we make use of the formula

$$a-b+2b=\text{Yoga}.$$

just as we derived the nakshatra from the tithi by means of the formula $a-b+b$. (Sec. **36** *supra.*)

49. Supposing we want to determine the yoga current at the ending moment of the tithi for 27th February 1910, we proceed as follows. We have found *supra* (Sec. **33**) that the 18th tithi ended at ·2479 day on 27th February, 1910, and that the corresponding solar day was 320·30 days, while the corresponding moon's anomaly was 12·324 days.

In accordance with the formula $a-b+2b$, we add twice the sun's longitude to the tithi.

The sun's longitude for 320·30 days is calculated as follows :—

For 320 days (last column of Table VIII) ...	25·6960
For ·30 day (Table V, sun's longitude) ...	·0242
	25·7202
Multiply this by 2	51·4404
Deduct completed lunation	29·5306
	21·9098
Add equivalent of 18 tithis (Table II) ...	17·7183
	39·6281
Deduct completed lunation	29·5306
	10·0975
The yoga corresponding to this lunation space is the 10th, i.e., *Ganda*, (Table III) whose space ends at	10·9372

This, therefore, was the yoga current at the ending moment of our tithi.

N.B.—Or as in Sec. **37**, the sun's longitude may be calculated directly from table XVII A and C thus :—

Sun's longitude for 320 days	313·2534°
Do. ·30 day	·2957
	313·5491°
Twice ☉'s longitude	= 627·0982°
Add tithi × 12	= 216°
	843·0982
Deduct completed circles	720°
☾'s Yoga longitude	123·0982

From the Eye-table we see that the current Yoga was Ganda.

Easy Method for Yogas.

51. A very simple method of determining the ending moment of any Yoga is indicated in Table XI which is to be used in precisely the same manner for Yogas as for Nakshatras. We proceed to show how Table XI should be used for Yogas for any year, any lunar month, and any yoga. We take the solar year, A.D. 1910-11, the Lunar month Kârttika, and Yoga "Ayushmat".

For the year 1910-11 A.D., the correction corresponding to 25·9134 (first new moon in solar year) according to the Yoga correction table, is determined as follows :—

Correction corresponding to	25	=	3·4797
" "	·91	=	·1267
" "	·0034	=	·0005
			3·6069

In Lunar Kârttika, A.D. 1910, there are two yoga " intervals " for No. 3 " Ayushmat ", from each of which 3·6537 can be deducted. Let us calculate the mean and absolute ending moments of each of these " Ayushmats ".

		Days.	☾'s Anom. Days.
First New Moon in solar year		25·9134	0·535
Add for Kârttika New Moon (Table X)		177·1835	11·856
		203·0969	12·391
First No. 3. Yoga: Interval ...	3·8846		
Correction ...	—3·6069		
Net Interval	+ ·2777	+ ·2777	+ ·278
		203·3746	12·669 or 12., 40gh., 10 p.
Commencement of solar year	Ap.	13·2080	☉'sEqn. + 7gh. 55p.
	Ap.	216·5826 or 216d. 34gh. 57p.	12d., 48gh. 5p.

(1) ☉'s Yoga Equation for Anom. of 203·3746 days, *i.e.*, 203d., 22gh. is, by Table IX—*i*, + 7gh., 55p.
(2) ☾'s Yoga Equation for Anom. of 12d., 48gh. 5p. is, by Table IX-*i*, – 5gh. 10p.
(3) Sum of ☉'s + ☾'s Equations = 2gh. 45p. + 2gh. 45p.

216d., 37gh. 42p. from 1 April,

i.e. (by Tables VIII and XIX) 37 ghaṭikas 42 palas after mean sunrise on 2 November, A.D. 1910 (Lanka time).

This is the absolute ending moment (according to Sûrya Siddhânta) of the first Ayushmat Yoga in the lunar month of Kârttika, Kaliyuga 5011 (expired).

52. For the second " Âyushmat " yoga of the same lunar month, we proceed as follows :—

		Days	☾'s Anom. Days.
Kârttika New Moon		203·0969	12·381
Net " interval " for No. 3 yoga :— From 29·3048			
Deduct yoga correction for the year	—3·6069		
	25·6979	25·6979	25·698
		228·7948 or 228 d., 47gh. 41p.	38·079
			27·555
Commencement of solar year April 13·2080 or		13d., 12gh. 29p.	10·524 or
		242d., 0gh. 10p.	10d., 31gh. 30p.
(1) ☉'s Yoga Eqn. (Table IX–*i*) for 228d., 48gh. is + 5gh. 12p.			Add. ☉'s Eqn. + 5gh. 12p.
			10d., 36gh. 42p.

242d., 0gh., 10p.

(2) By Table IX-*i*, ☾'s Yoga Eqn., for 10d., 36gh., 42p. is—15gh., 8p.

(3) Sum of ☉'s and ☾'s Yoga Equations = —9gh., 56p. — 9gh. 56p.

241d., 50gh. 14p. from 1 April,

i.e., (by Tables VIII and XIX) 50 ghaṭikas 14 palas after mean sunrise on 27 November, A.D. 1910.

53. For the years A.D. 1840 to A.D. 1919 yogas may be calculated very readily by means of Tables IX-*i*, XI-A, and XII. Thus, for "Vyatîpâta" yoga in April, A.D. 1910 :—

	d. gh. p.	d. gh. p.	☉'s An. d. gh. p.	☾'s An. d. gh. p.
Table XII, Chaitra new moon, A.D. 1910, April		9 35 27	361 38 30	26 6 48
(Table XI-A, col. XIII, (Chaitra follg. Adhika masa) Interval for No. 17 "Vyatîpâta" yoga	17 49 25			
Deduct Yoga correction for the year (Table XII)	1 0 45			
	16 48 40	+ 16 48 40	16 48 40	16 48 40
Tab. IX-*i* ☉'s Yoga eqn. for 13d. 11g.—8gh. 25p.		26 24 7	378 27 10	42 55 28
			* 365 15 30	† 27 33 20
,, ☾'s Eqn. for 15d. 13gh. 43p. + 7gh. 40p.			13 11 40	15 22 8
Sum of ☉'s and ☾'s Eqns. —0gh. 45p.		— 0 45		— 8 25 (☉'s Eqn.)
	April	26 23 22		
				15 13 43

That is, "Vyatîpâta" yoga in April 1910 ended at 23 ghaṭikas, 22 palas after mean sunrise on 26 April.

54. Yogas in their astronomical sense are not very much in use at present, but certain astrological *yogas* (Amritayoga, Siddhayoga, Maranayoga) are much more in use, being based on combinations of Nakshatras with certain week-days.

Apart from inscriptions in the Vikrama Era, where yogas are freely cited, one hears of the *yoga* proper in such auspicious combinations as the following :—

Kapilâ Shashthî, i.e., the combination of Bhâdrapada Krishna Shasṭhi (in a year in which either Bhâdrapada or some previous lunar month is *adhika*) with Nakshatra *Rohinî* and Yoga *Vyatîpâta* on a Tuesday. The combination is proverbially rare and supposed to be very difficult to foresee, but it can be easily predicted by means of the present method. Look in Table X for Bhâdrapada mean new moon (in a year having this or some previous month as *adhika*) falling on a Wednesday, mean ending moment being less

---

* The deduction of the period of an entire solar year is made here.

† The deduction of the period of an entire anomalistic lunar month is made here.

than ·50, and calculate *Rohini* Nakshatra and *Vyatîpâta* Yoga for that month. Of course the tithi, the nakshatra, or the yoga *may* fall on Monday or Wednesday, and then there will be no *Kapilâshashti*.

N.B.—In A.D.17, A.D.193, A.D.396, A.D.440............A.D. 1513 these were *Kapilashashtis* : none between A.D. 1840 and A.D. 2000. Let the student try A.D. 1736 and A.D. 1787.

Ardhodaya yoga, i.e., a combination on a *Sunday* by day-time, of Nakshatra *Rohinî* Yoga *Vyatîpâta*, and *Mâgha* amâvâsyâ (*i.e.*, the amâvâsyâ at the *end* of lunar Mâgha).

Champa Shashthî, i.e., a combination on a *Sunday* or *Tuesday* of *Mârgasîra*-śukla Shashti with Nakshatra *Satabhishaj* and Yoga *Vaidhriti*.

Mahâmahâ Varunî, i.e., a combination of *Phâlguna* krishna trayodaśî with *Saturday* and Nakshatra *Satabhishaj* and Yoga *Subha*.

Dasaharî, i.e., a combination in the *forenoon* of *Jyeshtha* śukla daśamî with *Wednesday* (or *Tuesday*) and Nakshatra *Hasta* and Yoga *Vyatîpâta*.

Mahâsivarâtri, i.e., Mâgha krishna chaturdaśî combining at *midnight* with *Sunday* or *Tuesday* and Yoga *Siva*.

N.B.—See further Chapter XVI below.

CHAPTER VIII.

KARANAS, AHAS AND TYAJYAM.

Karanas.

55. The list of *karanas* is given in Table III. Every tithi is divided into two *karanas*, and the ending moment of the second of every set of two *karanas* coincides with the ending moment of a tithi. For the other *karana* all we have to do is to add half a tithi, ·49217 day, to the last mean tithi, as well as to the corresponding solar and lunar anomalies and calculate from these data the absolute ending moment of the *karana*.

Thus on 27 February 1910 the mean tithi (18th) ended at ... ·2479 day.
For the 37th *karana* (*Bava*) add ... ... ·4922

·7401 day

	days.		days.
Sun's anomaly	320·30	Moon's anomaly	12·324
	·49		·492
	320·79 ; ⊙'s Eqn. +·1501.		12·816 + ·150 = 12·966

☾'s Equation—·0840.
Sum of the equations + ·1501—·0840 = ... + ·0661

·8062 day

i.e., the *karana Bava* ended at 48 ghatikas 22 palas on 27 February 1910.

56. Properly speaking, two karanas ought to be shown in the panchângam, corresponding to every tithi: but the panchângams in practice mark only that karana whose ending moment is 30 ghatikas or less from sunrise. If the tithi itself ends at 30 ghatikas or less from sunrise, the same ending moment is entered in the panchângams against both tithi and karana. In the above case, *i.e.*, 27 February 1910, the 36th karana *Vishti* (called *Bhadra* in the Tamil country) will be found marked in the panchângams as having the same ending moment as the tithi.

Ahas and Tyajyam.

57. Having discussed the five component parts of a panchângam proper, *viz.*, *vâra, tithi, nakshatra, yoga* and *karana*, it remains to notice two other entries usually found in a line with the first five, *viz.*, the *ahas* and the *tyâjyam.*

58. The *ahas* or duration of daylight is simply the normal period of daylight in India, *viz.*, twelve hours or 30 ghaṭikas, with the corrections for sunrise and sunset, deduced according to the rules to be presently laid down (Chapters IX and XI). Thus, if on a particular day the sun rose at 5-25 a.m. and set at 6-20 p.m. the *ahas* would be 12 hours + 35′ + 20′ = 12 hours 55 minutes, or 32 ghaṭikas 18 palas. (Tables XX and XIX.)

59. The *tyajyam* (lit., portion to be abandoned for purposes of business) is a definite portion of the total duration of each *nakshatra*, which portion is considered inauspicious. If the *tyâjyam*, always reckoned from the first moment of each nakshatra, ends by day, it is called a day-tyâjyam, and if it ends by night, it is called a night-tyâjyam, and in the latter case it is usual to deduct the *ahas* and state that the *tyâjyam* ends so many ghaṭikas and palas after sunset.

60. The following are the fractional parts which are *tyâjyam* for the several nakshatras :—

Tyajyam.

No.	Nakshatra	Tyajyam
1	Asvini (five-sixths)	$\frac{5}{6}$
2	Bharani (two-fifths)	$\frac{2}{5}$
3	Krittika (one-half) (**Tam.** Kiruttigai)	$\frac{1}{2}$
4	Rohini (two-thirds)	$\frac{2}{3}$
5	Mrigasira (seven-thirtieths) (**Tam.** Mirugasiram)	$\frac{7}{30}$
6	Ardra (seven-twentieths) (**Tam.** Arudra or Tiruvadirai)	$\frac{7}{20}$
7	Punarvasu (one-half)	$\frac{1}{2}$
8	Pushya (one-third) (**Tam.** Pusam)	$\frac{1}{3}$
9	Aslesha (eight-fifteenths) (**Tam.** Ayilyam)	$\frac{8}{15}$
10	Magha (one-half) (**Tam.** Magham)	$\frac{1}{2}$
11	Purva Phalguni (one-third) (**Tam.** Puram)	$\frac{1}{3}$
12	Uttara Phalguni (three-tenths) (**Tam.** Uttaram)	$\frac{3}{10}$
13	Hasta (eleven-thirtieths) (**Tam.** Hastam)	$\frac{11}{30}$
14	Chitra (fourteen-fifteenths) (**Tam.** Chittirai)	$\frac{14}{15}$
15	Svati (seven-thirtieths)	$\frac{7}{30}$
16	Visakha (seven-thirtieths) (**Tam.** Visakam)	$\frac{7}{30}$
17	Anuradha (one-sixth) (**Tam.** Anusham)	$\frac{1}{6}$
18	Jyeshtha (seven-thirtieths) (**Tam.** Kettai)	$\frac{7}{30}$
19	Mula (one-third) (**Tam.** Mulam)	$\frac{1}{3}$
20	Purva Ashadha (two-fifths) (**Tam.** Puradam)	$\frac{2}{5}$
21	Uttara Ashadha (one-third) (**Tam.** Uttiradam)	$\frac{1}{3}$
22	Sravana (one-sixth) (**Tam.** Tiruvonam)	$\frac{1}{6}$
23	Sravishtha or Dhanishtha (one-sixth) (**Tam.** Avittam)	$\frac{1}{6}$
24	Satabhisaj or Satataraka (three-tenths) (**Tam.** Sadayam)	$\frac{3}{10}$
25	Purva Bhadrapada (four-fifteenths) (**Tam.** Purattadi)	$\frac{4}{15}$
26	Uttara Bhadrapada (two-fifths) (**Tam.** Uttirattadi)	$\frac{2}{5}$
27	Revati (one-half)	$\frac{1}{2}$

N.B.—Authorities differ as to the *tyajyam* for certain of the nakshatras : for instance, Mr. Srauti has informed the author that his tyajyams for nakshatras Nos. 13, 14, and 19 are $\frac{7}{20}$, $\frac{1}{3}$, and $\frac{14}{15}$ (instead of $\frac{11}{30}$, $\frac{14}{15}$, and $\frac{1}{3}$) respectively.

61. The method of working out the *tyâjyam* is simple. We take the total duration of each nakshatra from the ending moment of the previous nakshatra up to its own ending moment and cut off the *tyâjyam*.

Thus, according to the table in section **175** on 12 July, 1910, Nakshatra Uttara Phalgunî ended at Madras at 51 ghaṭikas 50 palas.

On 13 July 1910, the next Nakshatra Hasta ended in the same latitude at 56 ghaṭikas 30 palas.

The total duration of the Nakshatra Hasta was, therefore, 64 ghaṭikas 40 palas.

The *tyâjyam* for Hasta is $\frac{11}{30}$

Now, $\frac{11}{30}$ of 64 ghaṭikas 40 palas = 11 × (2 ghaṭikas 9 palas) = 23 ghaṭikas 39 palas.

∴ The tyâjyam for Nakshatra Hasta ended on
12 July 1910, 51 ghaṭikas 50 palas
+ 23 ghaṭikas 39 palas

13 July 1910, 15 ghaṭikas 29 palas, which was a day *tyâjyam*.

Again, on 20 July 1910, Nakshatra Mûla ended at 31 ghaṭikas 56 palas.

On 21 July 1910, Nakshatra Pûrva Ashâdhâ ended at 35 ghaṭikas 36 palas.

∴ Total duration of Pûrva Ashâdhâ was 63 ghaṭikas 40 palas,

of which the *tyâjyam* was $\frac{2}{5}$, *i.e.*, 2 × (12 ghaṭikas 44 palas) = 25 ghaṭikas 28 palas.

∴ Tyâjyam for Mûla ended on 20 July 1910 at 57 ghaṭikas 24 palas;

which, being night-time, we deduct the *ahas*, 31 ghaṭikas 27 palas (arrived at in accordance with subsequent rules regarding sunrise and sunset);

∴ Tyâjyam ended at 25 ghaṭikas 57 palas after sunset on 20 July 1910, and was a night *tyâjyam*.

Our *tyâjyam* will, of course, differ from that entered in other panchângams exactly in proportion to the difference between our ending moment and that of other panchângams for Nakshatras.

CHAPTER IX.

SUNRISE.

62. As explained in sections **130, 131**, Part II "Use of the Tables", all Indian time is reckoned, in the first instance, from Lankâ sunrise, and corrections are then applied so as to arrive at the time reckoned from local sunrise. These corrections are three in number:—

(1) A correction for terrestrial longitude;

(2) A correction for equation of time;

(3) A correction for the sun's tropical longitude.

63. To understand the nature of these corrections, we shall give in popular language the astronomical theory of local time, as applied by Indian Astronomers.

(1) CORRECTION FOR TERRESTRIAL LONGITUDE.—If the sun moved uniformly along the celestial equator, all places on earth would have sunrise at exactly 6 a.m., local time. On this supposition local time for any moment of the day could be deduced from Lankâ time by adding or subtracting four times as many

minutes of time as there are degrees of longitude between Lankâ (or Ujjain) and the given place. The longitude of Ujjain being 76° East of Greenwich, any place whose longitude is more than 76° from Greenwich has a positive correction, and any place whose longitude is less than 76° has a negative correction for terrestrial longitude. For example : the longitude of Madras being $80\frac{1}{2}°$ East of Greenwich, *i.e.*, $4\frac{1}{2}°$ more than Ujjain, local time at Madras is obtained from Lankâ time by adding $4\frac{1}{2}° \times 4' = 18$ minutes of time.

N.B.—A meridian of terrestrial longitude makes a revolution of 360° in 24 hours, that is, it revolves 1° in $24 \times 60 \div 360 = 4$ minutes. This interval of 4 minutes may be called the *time-difference* corresponding to a degree of terrestrial longitude.

The TIME-DIFFERENCE or correction for terrestrial longitude for nearly 200 important places in India (their importance being gauged by their population according to the Census Report of 1901) is given in Table XIII-A, pages 189, 190. The correction is given in seconds of time which can be converted into *palas* or *vinadis* by simply dividing the correction by 24.

(2) CORRECTION FOR EQUATION OF TIME.—The sun does not move uniformly throughout the year, as we know from Table IX-*c* and Table XVII-A. Hence, for each day of the solar year, we have to apply a correction which depends on the day's equation of the centre. The correction for each day of the solar year on account of the equation of time is given in Table XIII and it is expressed, like the first correction, in seconds of time.

(3) CORRECTION FOR THE SUN'S TROPICAL LONGITUDE.—The sun does not move along the equator, as in our first supposition, but along the ecliptic ; and therefore it is only at the points where the ecliptic cuts the equator, *i.e.*, at the moments of vernal and autumnal equinox that the first supposition holds good. At other times of the year, a correction has to be applied, depending on the sun's tropical longitude, *i.e.*, on his distance from either equinox measured along the ecliptic.

64. Now, how are we to determine the sun's tropical longitude ? The longitude that is given by the day of the Indian solar year is a sidereal longitude, *i.e.*, the longitude of the sun measured from a fixed point of the ecliptic, which fixed point was the true vernal equinox about A.D. 500 or Kaliyuga 3600. Every year since then, the vernal equinox has been moving further and further away from that fixed point, and the sun's tropical longitude for any year subsequent to 3600 Kaliyuga must be found by adding to his sidereal longitude 3 degrees for every subsequent period of 200 years.* In this portion of our treatise degrees are always converted into days, and for the purpose of Sûrya Siddhânta tithis, the tropical longitude for any day in any year is determined *by adding to the day of the solar year* 1 *day for every 64 years expired since* 3740 *Kaliyuga* (*A.D.* 639). Other Siddhântas give the precession as 1 day for every 60 years, which is more correct than 1 day for every 64 years (*see* Sec. **277**).

[**65**. By reckoning 3740 Kaliyuga and not 3600 Kaliyuga as the date of coincidence of the sidereal and tropical longitude, we eliminate the Sodhya of 2·1707 days (Surya Siddhanta) ; otherwise we would have to deduct the Sodhya from the day of the solar year in order to arrive at the sidereal longitude and then add to the sidereal longitude so arrived at as many days as there were periods of 64 years since 3600 Kaliyuga. ($2·1707 \times 64 = 139·9248$, which is nearly 140.)

* This is the correction for precession of equinoxes. The addition to be made to Indian sidereal longitudes on account of the precession of equinoxes is given in degrees in sec. **284** under "Platnetary Chronology" for various epochs from A.D. 520 to A.D. 2051.

66. The present is perhaps the best occasion in a popular work of this description for explaining what is meant exactly by the *Sodhya* when applied to the sun's sidereal longitude. The sun's equation of the centre, according to Table XVII-A on 0 day of the solar year, is +2·1378 degrees, which, by Table VII (b) is the sun's motion for 2·17 days.

In other words, when the mean sun is at 0 day of the solar year, the actual sun has already done 2·17 days journey of his annual course. Therefore, whenever we wish to express in days the sidereal longitude of the true or actual sun, *i.e.*, his distance from the position he occupied on 0 day of the mean solar year, we deduct the Sodhya of 2·1707 days from the day of the solar year we are at.

67. For the year A.D. 1919 the tropical longitude is found by adding to the day of the Solar Year $\frac{1919-639}{64}=\frac{1280}{64}$, *i.e.*, exactly 20 days, and this addition holds good for 64 years, *i.e.*, for 32 years before and 32 years after A.D. 1919 or from A.D. 1887 to A.D. 1951. In Table XIII the correction for Tropical longitude which applies to the year A.D. 1919 is assumed to apply to the whole period of 80 years from A.D. 1840 instead of only to the period of 32 years from A.D. 1887. There is no great error in this assumption.

68. For 30 important places in India, including one for every degree of N. Latitude between 8° and 35°, and also Calcutta and Bombay which are dealt with separately at pp. 183 to 188, the total of all the three corrections is given in Table XIII for each day of the solar year. Further, the same table gives the equivalence of English and Indian solar dates for all solar years which commence on the 13th April; for other years we must make a ***deduction*** or ***addition*** according as the Indian solar year in question commenced ***after*** or ***before*** 13th April.

69. With these elementary notions on Time, we are ready to work out quite accurately (according to the Siddhântas) any problem in local time. We shall work out, by way of illustrations, the somewhat formidable array of problems which are presented in Professor Jacobi's learned article in Vol. II of the *Epigraphia Indica.*

(i) Kaliyuga 4128 ; 4 Bhâdrapada (Bengal solar month); place RATNAGIRI, 17° N. Lat.)

Correction (1) for terrestrial longitude; −34 vinadis. (We do not use this correction.)

Correction (2), equation of time: for 4 Bhâdrapada, *i.e.*, the 129th day of solar year, in 17° lat. + 425 seconds.

Correction (3), tropical longitude for Kaliyuga 4128, 4 Bhâdrapada: the number of days to be added to 129 is $\frac{4128-3740}{64}=\frac{388}{64}=6$. Now, 129 + 6 being 135, it follows that

correction (3) is that for the 135th day, 17° N. Lat., *i.e.*, + 746 seconds.

Total of the corrections (2) and (3) is + 425 + 746 = + 1171 seconds $=\frac{1171}{24}$ or 49 vinadis.

N.B.—Corrections (2) + (3) are sufficient for determining local sunrise: in this case the result " + 49 vinadis " means that on the day in question the sun rose at Ratnagiri 49 vinadis or 20 minutes before 6 a.m. [Result arrived at by Professor Jacobi, 50 vinadis which is also 20 minutes of time.]

(ii) Kaliyuga 4325, 4 Mârgaśira (Bengal solar month), SRINAGAR, latitude 34°.

Correction (1) : −8 vinadis. (We do not use this correction.)

Correction (2): + 437 seconds (220th day.)

Correction (3): For $220+\frac{4325-3740}{64}=220+\frac{585}{64}=220+9=229$ days,
the correction is – 2248 seconds.

Total of corrections (2) and (3): + 437 – 2248 sec. = – 1811 seconds = —75 vinadis.
[Professor Jacobi arrives at the result – 74 vinadis.]

(iii) Kaliyuga 4128; 7 Jyeshṭha (Bengal solar month); ALIGARH, latitude 28°.

Correction (1), + 14 vinadis. (We do not use this correction.)

Correction (2), – 291 seconds (37th day).
Correction (3), + 2576 seconds (43rd day).
{ Total of corrections (2) + (3): + 2285" = 95 vinadis (94 vinadis according to Professor Jacobi).

(iv) Kaliyuga 3585; Âshâdha *sukla* 12 (lunar month), ERAN, 24° N. Lat.
See PART III, sec. **261**, p. (92) of the text.

70. The reader should note carefully when the total of all *three* corrections should be used and when the total of corrections (2) and (3) will suffice. When we merely want to know by how many seconds *local* sunrise preceded or followed 6 a.m., we should simply add up the second and third corrections, for here there is no need to consider the effect of terrestrial longitude. If the total correction is positive, sunrise precedes 6 a.m.; if the total correction is negative, sunrise is later than 6 a.m. The first three examples above illustrate this aspect of the problem.

When we want to know how many seconds should be added to or deducted from the ending moment of a *tithi* or *nakshatra*, of which we already know the Lankâ time, *i.e.*, the time relatively to Lankâ sunrise, we should sum up all *three* corrections, and if the sum is positive we should add it to Lankâ time, while if the sum is negative it should be subtracted from Lankâ time.

For examples, see the tables for determining the local Madras time of the ending moments of 30 tithis and 27 nakshatras in sections **167** and **175**, Part II *infra*.

CHAPTER X.

LAGHNA.

71. Closely analogous to the calculation of sunrise is that of the *laghna*, i.e., the portion of the ecliptic which appears at the eastern horizon at a *particular moment of the day*. At other times we might require to know the moment of the day when a *particular portion of the ecliptic* will be *laghna*. An example of the first kind of problem is :—

"What is the laghna at the moment of a person's birth"?

N.B.—The portion of the ecliptic which is *laghna* or "cut" at the horizon at any given moment is ordinarily referred to as "the *laghna*".

An example of the second problem is:—

"At what moment of a day, suitable for marriage, will a particular sign of the zodiac be laghna, so that the hour as well as the day most suitable for marriage may be determined"?

The best exposition of the Laghna is that given by Professor Jacobi at pp. 189, 190 of the *Indian Antiquary* for 1900, Vol. XXIX. A slight adaptation of Professor Jacobi's rules will be necessary to suit our Sunrise Table XIII.

72. The Rules are :—

(1) Calculate the time-difference for the interval of space between the sun and the portion of the ecliptic which is laghna.

(2) Apply the necessary corrections for tropical longitude.

73. *Problem I.*—At how many *ghatikas* and *palas* after sunrise was the 165th degree of the ecliptic (*i.e.*, the 15th degree of the sign *Kanya vide* Eye-table—) *laghna* on the 6th Jyeshṭha (Bengal solar month) in Kaliyuga 4000, Latitude 20° North? By Table VIII, the end of 6th solar *Jyeshtha* was ·60 + 30·93 + 6 = 37·53 days from the first day of the solar year.

(*N.B.*—We add ·60 on account of the commencement of the solar year according to Table X—*Surya Siddhanta*).

Now, the sidereal longitude corresponding to any day of the solar year is found from Tables XVII-A and XVII-C (Tables, p. 207 208) thus :—

☉'s Long. for 37 days of the solar year (Table XVII-A).	34·32°
☉'s Long. for ·53 day (Table XVII-C)	·52
	34·84°

For the present purpose we take the nearest whole degree, *i.e.*, 35 degrees.

The interval in space between 35° and 165° = 130°.

Now 360° of the ecliptic rise above the horizon in 1 day or 60 ghaṭikas.

$$\therefore 130^\circ \quad \ldots \quad \ldots \quad \ldots \frac{130 \times 60}{360} = 21\tfrac{2}{3} \text{ ghatikas}$$

$$= 21 \text{ ghaṭikas } 40 \text{ palas.}$$

In other words, the 165th degree of the ecliptic was *laghna* about 21 ghaṭikas 40 palas after sunrise on the day in question.

74. Next, we proceed to apply the corrections for tropical longitude.

The difference between the tropical and sidereal longitude of the sun for the year 4000 Kaliyuga $= \frac{4000-3740}{64} = 4$ days. Now 37·53 days + 4 days = 41·53 days.

The correction for the tropical longitude of the sun is that pertaining to the 41st day in Table XIII, p. 165, under latitude 20°, *i.e.*, + 1865 seconds.

For the correction for tropical longitude of the laghna, *i.e.*, sidereal 165° of the ecliptic in Kaliyuga 4000 we have to determine the day when the sun accomplishes 165° of the ecliptic, which is determined as follows from Tables XVII-A and XVII-C :—

(Table XVII-A)	169 days	=	164·43°
(Table XVII-C)	·58 day	=	·57°
	169·58 days	=	165°

We add 4 days to 169·58 days for tropical longitude in the year 4000 Kaliyuga. Total 173·58 or 174 days.

The correction for tropical longitude corresponding (in Kaliyuga 4000) to sidereal 165°, or tropical 174 days, is, + 151 seconds.

We add this correction *with the sign reversed* to the first :—

$+1865-151=1714$ seconds $= +72$ palas.

Adding this correction to the approximation first arrived at, we have

21 ghaṭikas 40 palas.
+ 1 ghaṭika 12 palas.

22 ghaṭikas 52 palas.

This was the moment (according to Professor Jacobi, *loc. cit.*) when the 165th degree of the ecliptic was *laghna* on the day in question.

N.B.—Firstly, we had to convert 165° of the ecliptic into days in order to apply Table XIII, which expresses the various portions of the ecliptic as days of the solar year.

Secondly, we reversed the sign of the correction in the case of the *laghna* because what we wanted was the difference between the corrections on account of the tropical longitude of the sun and of the *laghna* respectively.

75. *Second Problem.*—" What portion of the ecliptic was *laghna* on the same day at 20 ghaṭikas after sunrise " ?

We have seen that the Solar 6th Jyeshṭha corresponds to 35° sidereal longitude.

Now, a time-difference of 20 ghaṭikas answers to an interval in space of $20 \times \frac{360}{60} =$ 120 degrees.

∴ The portion of the ecliptic which was laghna at 20 ghaṭikas after sunrise was (*roughly*) $120° + 35° = 155°$ or the 5th degree of the 6th sign *Kanya* (*vide* Eye-table for the longitude corresponding to the different Râśes).

This is enough for all ordinary calculations of laghna.

If we wish to be quite accurate, we proceed as follows. The correction for tropical longitude of the sun on the day in question was, as we have seen, + 1865 seconds.

The correction for the tropical longitude of the *laghna*, i.e., 155° of the ecliptic must be found by applying Tables XVII-A and XVII-C.

(Table XVII-A) 159 days = 154·57°
(Table XVII-C) ·44 day = ·43°

159·44 days = 155·00°

Add for tropical longitude 4 days

163·44 days.

The correction for tropical longitude pertaining to the 20th degree of latitude and the 163rd day (in Kaliyuga 4000) is (by Table XIII) + 333 seconds.

We add this *with sign reversed* to the first correction :

$+1865-333= +1532= +64$ palas.

In other words, on the day in question, the 155th degree of the ecliptic was laghna at 20 ghaṭikas *plus* 64 palas.

We want, however, the degree of the ecliptic which was *laghna* at exactly 20 ghaṭikas after sunrise.

76. The annexed small table adapted from Prof. Jacobi's Table of *udayâsus* in Vol. I, *Ep. Ind.*, enables us to accomplish this stage of the problem.

We learn from this table that in the 20th degree of latitude the 6th sign of the zodiac (Kanyâ, with which we are concerned) takes 257 seconds to rise *one* degree above the horizon.

∴ 64 palas or 1532 seconds are taken to rise $\frac{1532}{257} = 5{\cdot}9611°$

or (by Table XX) 5 degrees 57 minutes 40 seconds,

or nearly 5 degrees 58 minutes.

In other words, we should deduct 5 degrees 58 minutes from 155° in order to know which portion of the ecliptic was *laghna* at exactly 20 ghaṭikas after sunrise on the day in question.

The portion in question was 155° *minus* 5 degrees 58 minutes = 149 degrees 2 minutes, which is exactly the result arrived at by Professor Jacobi.

TABLE.

Time (in seconds) taken by a Degree of the Ecliptic to rise above the Horizon.

DEGREES OF TERRESTRIAL LATITUDE FROM 8° TO 35°.

Signs of the Zodiac.	Degrees of Ecliptic.			8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°	21°
I	0°— 30°	XII	330°—360°	210	208	206	204	202	201	199	197	195	194	192	190	188	186
II	30 — 60	XI	300 —330	229	227	226	224	223	221	220	218	217	215	214	212	211	206
III	60 — 90	X	270 —300	253	253	252	252	251	251	250	250	249	248	248	247	246	249
IV	90 —120	IX	240 —270	263	263	264	264	265	266	266	267	267	268	269	269	270	270
V	120 —150	VIII	210 —240	250	251	253	254	256	257	259	260	262	263	265	266	268	269
VI	150 —180	VII	180 —210	...	...	239	241	243	244	246	248	250	252	254	255	257	259

Signs of the Zodiac.	Degrees of Ecliptic.			22°	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°	35°
I	0°— 30°	XII	330°—360°	184	182	180	178	176	174	172	170	168	165	163	161	159	157
II	30 — 60	XI	300 —330	208	206	204	203	201	199	197	196	194	192	190	188	186	184
III	60 — 90	X	270 —300	245	244	244	243	242	242	241	240	239	238	238	237	237	236
IV	90 —120	IX	240 —270	271	273	273	274	274	275	275	276	277	277	278	278	279	280
V	120 —150	VIII	210 —240	270	272	274	276	278	279	281	283	285	287	289	291	293	295
VI	150 —180	VI	180 —210	261	263	265	267	269	271	273	275	278	280	282	284	286	288

CHAPTER XI.

SUNSET.

77. The considerations to which we have introduced the reader in dealing with Sunrise and Laghna will enable him to deal also with *sunset,* which is only the supplement (in the language of geometry) of *sunrise.*

Supposing the sun is at a point of the ecliptic whose tropical longitude is 100°, then we have to consider at sunrise how long, relatively to the mean sun on the equator, the mean sun on the ecliptic takes to rise 100°, and at sunset we have to consider how long, relatively to the mean sun on the equator, the mean sun on the ecliptic takes to fall 80°. [*see* Sec. **63** (3)]

78. Accordingly, to determine the moment of sunset by local time, we should take the sum of (1) the correction for equation of time, which is the same or nearly the same as for sunrise, and (2) the correction for tropical longitude, which will be the supplement of the tropical longitude for sunrise. The supplement of an angle is the difference between it and 180°. In our sunrise tables, degrees are expressed as days and by Tables XVII-A and XVII-C, 180° = 184·80 days or in round figures 185 days.

79. What we have to do, therefore, to determine the second correction for sunset is to find the difference between the day of the solar year under consideration and 185 days, and take the correction for tropical longitude for the day so arrived at. If the solar day we are considering exceeds 185 days, the sign of the tropical longitude for the difference will remain unchanged: otherwise the sign should be reversed. This correction should then be added to the equation of time in order to determine the interval between sunset and 6 p.m. local time, while the total so arrived at should be added again to correction (1) adverted to in sec. **63**, *i.e.*, the correction for terrestrial longitude, in order to arrive at the interval between 6 p.m. *Lankâ* time and *local* sunset.

80. In the absence of any other standard authorities on the subject, we may compare our calculations of sunset for A.D. 1910–11 with those given in the Kumbakonam Mutt Panchângam, edited by Mr. Viŝvanâtha Srauti, B.A.

Latitude 11° N. (Tanjore).

Date by European Calendar as well as by Tamil Solar Year *Sâdhârana*, A.D. 1910.	Day of Solar Year according to Table XIII.	Equation of Time in Seconds by Tab. XIII under Lat. 11° for the day of Solar Year entered in col. 2.	Supplement to Trop. longitude in Days (*i.e.*, difference between col. 2 increased by 20 and 185 days).	Correction for Trop. Longitude acc. to Tab. XIII for the Supplemental day arrived at in column 4 (*sign to be reversed if necessary*).	Sum of Corrections arrived at in columns 3 and 5.	Moment of Sunset according to col. 6.	Sunset according to Mr. Srauti's Panchangam for 1910.
1	2	3	4	5	6	7	8
						P.M.	P.M.
Chittirai 1 (Ap. 13)	1	−435″	164th day	− 22″	− 457″ = − 7′	6-7	6-7
Vaikasi 2 (May 15)	32	−352″	133rd day	− 312″	− 664″ = −11′	6-11	6-11
Ani 3 (Je. 16)	65	−147″	100th day	− 986″	−1133″ = −19′	6-19	6 19
Adi 3 (Jl. 18)	97	+163″	68th day	−1469″	−1306″ = −22′	6-22	6-23
Avani 4 (Au. 19)	129	+411″	36th day	−1168″	− 757″ = −13′	6-13	6-14
Purattasi 5 (S. 20)	161	+515″	4th day	− 144″	+ 371″ = + 6′	5-54	5-55
Aippasi 6, (O. 22)	192	+494″	27th day (212 − 185 = 27)	+ 969″	+1463″ = +24′	5-36	5-36
Kartigai 8 (N. 23)	224	+353″	59th day	+1523″	+1876″ = +31′	5-29	5-30
Margali 3 (D. 17)	249	+140″	84th day	+1278″	+1418″ = +23′	5-37	5-37
Tai 21 (F. 3) A.D. 1911 ...	296	−268″	133rd day	+ 312″	+ 44″ = + 1′	5-59	6-1
Panguni 2 (Mr. 15) A.D. 1911 ...	337	−421″	172nd day	+ 12″	− 409″ = − 7′	6-7	6-8

81. We observe (1) that sufficiently accurate results can be obtained by taking whole days instead of days and fractions of days in columns 2 and 4 *supra*; in other words, it is not necessary to calculate the day of the solar year with exactitude as we did for Problem I under "**Laghna**", (2) that a *positive* correction in column 6 re-appears in column 7 as a *deduction* from 6 p.m., while a *negative* correction in column 6 re-appears in column 7 as an addition to 6 p m.

Supposing a birth took place 2 hours after sunset on 13 April, 1910, the moment of birth would be 6 p.m. + 2 hours + 7′ = 8-7 p.m. In this case sunset was 6-7 p.m. On the other hand, if a birth took place 2 hours after sunset on 23 November, 1910, then the correction for sunset being + 31′, the local time at which the birth took place would be 6 p.m. + 2 hrs. − 31′ = 7-29 p.m. In this case sunset was at 5-29 p.m.

CHAPTER XII.

ECLIPSES.

82. Eclipses are a most valuable and unerring historical record, and eclipses are freely cited in Indian historical documents. Accordingly, the date of occurrence of solar and lunar eclipses has been indicated in Tables X and XII by means of the symbol ● for solar eclipses and ⊙ for lunar eclipses. A solar eclipse can occur only at new moon and a lunar eclipse can occur only at full moon, and as full moons are not specially indicated in Tables X and XII, every lunar eclipse is shown merely as occurring in a particular lunar month. The actual date of a lunar eclipse can be found by working out the exact ending moment of the full-moon tithi, *i.e.*, *panchadasî* or *paurnamî*. For this, of course, it will be necessary to add the collective duration of 15 tithis, *i.e.*, 14·76 days (Eye-table), to the mean moment of new moon and also to the moon's and sun's anomaly at that moment and add to, or subtract from, the mean moment of full moon the sum of the sun's and moon's equations. (See examples worked out in sections **93** and **94**.)

83. We may preface our observations on eclipses by the following passages from a well-known French work, first published in the 18th century, and still regarded as a standard authority on chronology, " *L'Art de vérifier les Dates ;—*

" The magnitude of an eclipse is indicated in digits. A digit is the twelfth part of the diameter of a heavenly body : accordingly, an eclipse of four digits is one where the third part of the diameter of a heavenly body is in shadow ; if one half of the diameter is in shadow, the eclipse is said to be of six digits ; and if the whole of the diameter is in shadow, the eclipse is said to be of twelve digits. Further, in a total eclipse, if the part which is least in shadow is removed from the edge of the shadow by as much as two digits, these two digits are added to the twelve, and the eclipse is said to be one of fourteen digits...............

84. " The duration of an eclipse of the moon is proportional to its magnitude ; but it does not depend on this factor alone. We may say, in general, that a total eclipse of the moon will last at least 3½ hours, and at most 4 hours and a few minutes. A partial eclipse above 6 digits may last as much as 3¼ hours or as little as 2½ hours ; it seldom goes beyond those limits. An eclipse of between three and six digits lasts between two and three hours. The duration corresponding to 2 digits is 1½ hours ; to 1 digit, 1 hour ; to half a digit, ¾ of an hour. The duration of total obscurity in a total eclipse is from 1½ to 2 hours.........

85. " The Moon has no light of her own, but reflects that received by her from the Sun. Consequently, when in an eclipse the Earth passes between the Moon and the Sun, and cuts off the rays of the Sun from the Moon, the latter can shed no more light on Paris than on Pekin or on Constantinople. An eclipse of the Moon, therefore, commences at all points of the Earth at the same instant and lasts everywhere for the same length of time. All that we need see is whether the time of a lunar eclipse falls between local sunset and sunrise, as otherwise the eclipse will not be visible.

86. " On the other hand, the Sun is a self-luminous body: the Moon is very much smaller than the Earth : she is, in fact, a mere point in comparison with the Sun. From these well-known facts it follows that in a solar eclipse, the Moon passing between the Earth

and the Sun, cannot cut off the rays of the Sun from all parts of the Earth, at the same instant. She casts her shadow in succession on different parts of the Earth, and even the successive passage of the Moon's shadow covers during a single eclipse only a small total extent of the Earth's surface. Thus, journeying from West to East, a solar eclipse may first strike Spain, then France, then Germany, and then in succession the eastern countries as far as the farthest East of Asia, but the whole time Africa may remain untouched by the Moon's shadow ".

87. The extent of the earth's surface, affected by a solar eclipse, is therefore a matter of calculation: and an exact calculation is by no means easy to introduce into a popular work of this kind.

The book entitled *L'Art de vérifier les Dates* gives (1) *all* lunar eclipses and (2) *all* solar eclipses visible anywhere in the civilized world known to history, marking, by a series of ingenious conventions, the path of each solar eclipse, the regions where it is visible and the latitudes where it is central (*a*) under the fifth meridian, *i.e.*, the meridian of Paris, (*b*) under the meridian where it is noon at the moment of true conjunction, and (*c*) under the 155th meridian. Other useful details, given under each eclipse, in the same valuable work, need not be reproduced here, as nothing short of a translation of the whole Chapter on Eclipses would give the reader an adequate idea of its contents.

88. We have given in Tables X and XII *all* lunar eclipses, and it is easy for the reader to calculate the ending moment of the full moon tithi, which will enable him to know whether the eclipse could have been seen in India at the place under consideration. We have given *all* solar eclipses, as given in the French work, from A.D. 1 to A.D. 300, and after the latter date we have, as a rule, not mentioned eclipses which, according to the same authority, could not have been visible in India. From A.D. 1900 to A.D. 2000 all solar eclipses are marked.

89. The points where the moon's orbit crosses the ecliptic are called the *nodes* and in order that an eclipse may occur, the opposition at the time of a lunar eclipse, or the conjunction at the time of a solar eclipse, must happen at or near a node. The sun's distance from either node is therefore an important factor in determining whether an eclipse is or is not possible at a particular New or Full Moon. Eclipse-Table X-A (pp. 130, 131) for Centuries and Odd Years will enable the reader to calculate the Sun's distance from either node at any moment from B.C. 1 to A.D. 2000, and by applying the following canons (adapted from Professor Jacobi's article in Vol. 1 of *Epigraphia Indica*) he may determine whether a solar or a lunar eclipse is certain, doubtful, or impossible at a particular New or Full Moon respectively.

Solar and Lunar Eclipses as determined by Sun's distance from node at New and Full Moon.

If Sun's distance from node at New Moon is

Between 0 and 15·598 days, or between 157·714 and 173·312 days,	A SOLAR ECLIPSE IS	**Certain.**
Between 15·771 and 18·198 days or between 157·541 and 155·114 days,		**Doubtful.**
Between 18·371 and 154·939 days,		**Impossible.**

IF SUN'S DISTANCE FROM NODE AT FULL MOON IS

	A LUNAR ECLIPSE IS
Between 0 and 10·052 days, or between 163·260 and 173·312 days,	**Certain.**
Between 10·225 and 13·345 days, or between 163·087 and 159·967 days,	**Doubtful.**
Between 13·518 and 159·794 days,	**Impossible.**

90. We shall now apply the canons to some actual cases, and see how far they will be of use to us in practice.

Opening the first page of Table X, we see a succession of solar eclipses at the Jyeshṭha new moon in the years A.D. 12, A.D. 13, and A.D. 14, and we see a similar succession of lunar eclipses in the same lunar month in the years A.D. 20, A.D. 21, and A.D. 22. We also see that in Lunar Jyeshṭha, A.D. 12, as well as in Lunar Jyeshṭha A.D. 22, there was a lunar as well as a solar eclipse. We shall see if our canons will help us in verifying these eclipses. The reader should note how an eclipse may be located with the help of the secular distance of the sun from the node (*i.e.*, Distance from node for Centuries and Odd Years) as given in Table X–A and the head line entries of Table X.

⊙'s Distance from Node Table X–A	**(1)** A.D. 12 days	**(2)** A.D. 13 days	**(3)** A.D. 14 days	**(4)** A.D. 20 days	**(5)** A.D. 21 days	**(6)** A.D. 22 days.
For century 1 B.C. ...	62·91	62·91	62·91	62·91	62·91	62·91
For odd year	50·30	68·93	87·56	26·06	44·69	63·33
Up to first New Moon in Solar Year	26·95	16·06	5·17	28·41	17·52	6·62
Up to Jyeshṭha New Moon	29·53	29·53	29·53	29·53	29·53	29·53
Up to Jyeshṭha Full Moon	...	...	...	14·76	14·76	...
	169·69	177·43	185·17	161·67	169·41	162·39
Deduct 173·31 days ...	(7)	* 173·31	* 173·31	...	...	(8)
		4·12	11·86			
Up to Jyeshṭha Full Moon	14·76	...	...	...	...	14·76
	184·45					177·15
Deduct	* 173·31	...	...	...	...	* 173·31
	11·14 (1)					3·84 (6)

We can now classify these results.

SOLAR ECLIPSE: *Certain,* Results at foot of columns (**2**), (**3**), and also those in columns (**1**) and (**6**) marked (**7**) and (**8**) respectively.

LUNAR ECLIPSE: *Certain,* Results at foot of columns (**5**) and (**6**).
Doubtful, Results at foot of columns (**1**) and (**4**).

* The period of conjoint revolution of the sun's and moon's nodes is 346·6246 days and the half revolution is 173·3123167 days. This period should therefore be deducted whenever the sun's distance from a node exceeds 173·31 days.

91. We shall next see to what extent the canons will be of use to us in predicting eclipses. We may take as an example the solar year A.D. 1910. *

We first of all find out the distance of the sun from the node at the first new moon in the solar year.

⊙'s distance from node for century beginning A.D. 1900	120·62
" " " for odd year 10	13·03
" " " at first new moon in solar year A.D. 1910 ...	25·91
	159·56

92. As regards solar eclipses, we have to see whether 159·56 by itself, or the same increased by 29·53, or any multiple of 29·53 entered in the head lines of Table X, will bring us within the limits of *certain* or even *doubtful* solar eclipses.

We see at once that the figure 159·56 is itself within the limits of a *certain* solar eclipse. The date is the first new moon in the solar year, *i.e.*, 9th May, 1910. This eclipse was invisible in India.

The addition to 159·56 of 29·53 gives us 189·09, which by deduction of 173·31 is equivalent to 15·78, which is beyond the limits of certainty. There was in fact no solar eclipse on the corresponding date, Jyeshtha new moon, 7th June, 1910.

The addition to 159·56 of 177·18 (Kârttika new moon) will give us 336·74, which by deduction of 173·31 leaves 163·43, which is within the limits of certainty. In fact, there was a solar eclipse (invisible in India) on *Kârttika* New Moon, *i.e.* (according to Table X or XII) 2nd November, 1910.

The addition of no other multiple of 29·53 to 159·56 will give us a figure within "certain" or even "doubtful" limits for solar eclipses.

93. As regards lunar eclipses, our starting figure 159·56 should be increased by the day equivalent of the full moon tithi, 14·76 days.

159·56 + 14·76 = 174·32 days.
Deduct 173·31

1·01 days.

We see that in the first lunar month of the solar year A.D. 1910 there must be a lunar eclipse.

The actual ending moment of the full moon tithi works out as follows :—

		Days.	Anomaly of first new moon.
First new moon in solar year		25·9134	0·535
		14·7653	14·765
⊙'s Equation for 40·67	+ ·1140	40·6787	15·300
☾'s Equation for 15·414	+ ·1650		+ ·114 (⊙'s Eqn.)
	+ ·2790	+ ·2790	15·414
Commencement of Solar Year, Ap.		13·2080	
		54·1657	
Add total correction for latitude 13° N. on 40th day of Solar Year (Table XIII)		·0286	
		54·1943	

* This portion of the text was written before the eclipse in question happened. The force of the illustration is of course not lessened by its referring to an event now past and it has therefore been retained.

It thus appears that the centre of the eclipse occurred at Madras at ·1943 of a day, *i.e.*, at 11 ghaṭikas 39 palas after sunrise. It is evident that a lunar eclipse at such an hour would be invisible in India.

94. The ⊙'s distance from node at the first full moon of the solar year A.D. 1910 being 1·01, it is evident that an addition of 177·18 days, which will take us to the Kârttika Full Moon, will give us 178·19, which by deduction of 173·31 gives us 4·88 days, which is within the limits of a "certain" lunar eclipse. Let us calculate the actual ending moment of this Full Moon tithi.

	Days of Solar year.	☾'s Anomaly. Days.
First Full Moon in Solar Year A.D. 1910 (sec. **93**) ...	40·6787	15·300
Add for Kârttika Full Moon ...	177·1835	11·856
	217·8622	27·156
⊙'s Equation for 217·86 days = — ·1263		—·1263 (⊙'s Eqn.)
☾'s Equation for 27·029 days = + ·0453	—·0810	
		27·0297
— ·0810	217·7812	
Commencement of Solar Year 1910, Ap. 13	·2080	
	217·9892	
Total correction (by Table XIII) for 217th day,	+ ·0111	
	218·0003	

∴ the centre of the eclipse at Madras was on the 218th day, reckoned from April 13, *i.e.*, (by Table VIII) 17th November, 1910, at ·0003 of the day, *i.e.*, 1 pala or half a minute after sunrise on 17th November, 1910.

This very nearly agrees with the prediction in the Nautical Almanac reduced to the longitude of Madras. The eclipse was visible at Madras.

No other multiple of 29·53, added to 1·01, will give us a lunar eclipse in the Solar Year A.D. 1910 within the limits of certainty.

95. A third use of the canons is to enable us to detect omissions from or incorrect entries in lists of eclipses.

The book entitled *L'Art de vérifier les Dates* states that there was no eclipse in the year A.D. 555.

But seeing that the ⊙'s distance * from node at the first new moon in the solar year A.D. 554—55 was 163·66 days, and that the year was one with an *adhika* month, it is plain from the head-lines of Table X that the addition to 163·66 of 354·37 gives us 518·03 days, which, deducting 346·62 leaves 171·41 days, which indicates that *certainly* there was a solar eclipse at the corresponding New Moon, *i.e.*, on Chaitra New-Moon day, 8th March A.D. 555. As a matter of fact, it appears from OPPOLZER's *Canon der Finsternisse*, that there was a solar eclipse on 8th March, A.D. 555.

*23·76
139·68
0·22
163·66

96. Let us next take a case in which the canons will show us that the *Art de vérifier* is right and other lists wrong. The French book mentions a Lunar Eclipse (penumbral) on 6th May A.D. 692, while other lists do not mention it.

*154·79
154·53
3·24
312·56
29·53
14·76
356·85
—346·62
10·23

We find that the ☉'s distance* from node at the full moon following Jyeshtha New Moon (21 Ap. A.D. 692) was, as shown in the margin, 10·23 days, which makes it almost certain that there was then a Lunar Eclipse. The French chronological work is, therefore, right.

CHAPTER XIII.

JOVIAN CYCLES, YEARS, AND MONTHS.

[*Note.*—For the calculation of the mean period of a Jovian year, see sec. **230** *infra.*]

97. A Jupiter's cycle of 60 Jovian years is often met with in Indian chronology as a mode of reckonng time. Each of the years in the cycle receives a name corresponding to the name of one of the years in Table I, but while the so-called Jupiter's cycle in Table I, as used to this day in Southern India, is merely a cycle of 60 Indian solar years, the Jupiter's cycle, properly so called, which has been in use in Northern India and which is given in Table XIV, is a cycle of real Jovian years, calculated by means of the multiplication tables in Table V and the following table for centuries.

Kaliyuga.	Christian Era.	Jupiter's Samvat (with bija).	Kaliyuga.	A.D.	Jupiter's Samvat (with bija).
3001	B.C. 101	36·1117	4101	1000	8·9817
3101	B.C. 1	17·2817	4201	1100	50·1517
3201	A.D. 100	58·4517	4301	1200	31·3217
3301	200	39·6217	4401	1300	12·4917
3401	300	20·7917	4501	1400	53·6617
3501	400	1·9617	4601	1500	34·8317
3601	500	43·1317	4701	1600	15·9917
3701	600	24·3017	4801	1700	57·1717
3801	700	5·4717	4901	1800	38·3417
3901	800	46·6417	5001	1900	19·5117
4001	900	27·8117	5101	2000	0·6817

98. We shall take an example of a Jupiter's Samvat and show how it is calculated. The Date of a Sanskrit Manuscript is given by its author as "Saka 1396, (Vikrama) Samvat 1531, year *Subhakrit*, Kârttika Sudi 9, after Dakshinâyana on Wednesday, *Dhanishtha* Nakshatra, *Vriddhi* yoga, *Kaulava* karana, the moon in *Kumbha*" (*Indian Antiquary*, XIX, p. 27). For the Nakshatra, Yoga, Karana and Zodiacal Sign in this case, see sec. **266**, *infra*.

We first calculate the tithi in the usual way :—

By Table X the Kârttika New Moon of Vikrama 1531 (A.D. 1474), was

(2) Monday, October 10·85

☾'s Equation + ·20
☉'s Equation – ·15
+ ·05

		☉'s Anomaly.	☾'s Anomaly.
		20·27	4·559
		177·18	11·856
Add for 9 tithis	8·86	8·86	8· 86
Equation	+ ·05		25·275
(4) Wednesday, Oct.	19·76	206·31	☉'s Eqn.—·15
			25·12

We have now to find the equivalent in Jupiter's cycle of the 206·31 days of the solar year A.D. 1474.

Equivalent of A.D. 1400 (by above table)	53·6617
„ „ 74 years (Table V) Jupiter's Samvat	14·8658
„ „ 200 days (do.)	·5540
„ „ 6 days (do.)	·0166
	69·0981
Deduct completed cycle	60
	9·0981

That is, No. 9 of Jupiter's cycle (according to Table XIV) *i.e.*, *Subhakrit* had expired on the day in question of the solar year.

99. The year of Jupiter's cycle, ordinarily quoted in N. India, is that which was completed at the *beginning* of the solar year, and in this case inasmuch as only ·098 of the Jovian year, *i.e.*, only 36 days, had elapsed since the beginning of Subhakrit up to the 206th day of the solar year, the previous Jovian year, *Plava*, must have been current at the beginning of the solar year A.D. 1474. When the Jovian year quoted is only that which had been completed at the beginning of the solar year, all we have to do is to calculate the Jovian year for the *integral* solar year we are dealing with or, which is much simpler, read off the corresponding year of Jupiter's cycle from Table XIV.

100. Altogether, we see there are three meanings which might be attached to the citation of a year of Jupiter's cycle :—

(1) A year of the southern cycle (Table I), which is merely a solar year with a Jovian *name*.

(2) A year of the northern cycle (Table XIV), which is the Jovian year actually completed at the *beginning* of a solar year.

(3) A year of the northern cycle (Table XIV), being the Jovian year actually completed at the actual *moment* we are dealing with.

The context alone must enable us to conjecture which of these meanings is to be attached to a citation of a Jovian year.

101. Also, where the second of the three modes of citation is followed, it is evident that if any other Jovian year has had its beginning *as well as its end* in the course of a solar year, that Jovian year will be *kshaya* or suppressed.

Hence it is that certain Jovian years are actually suppressed in the northern system of reckoning. The suppressed years are shown by blanks (......) in Table XIV.

For instance, the Jovian equivalent of A.D. 1514 (solar year) is 34·8317
+ 14·1638

48·9955

And the Jovian equivalent the next year, of A.D. 1515* (solar year) is 34·8317 + 15·1755 = 50·0072. That is, the 48th Jovian year, **Vrisha** was current † at the beginning of Solar Year A.D. 1514* and the 50th Jovian year (**Subhanu**), was current † at the beginning of Solar Year A.D. 1515*. Therefore the 49th Jovian year **Chitrabhanu** which was not used in this particular cycle of 60 years, was *kshaya* or suppressed. Of course there would be no suppression of a Jovian year if the third mode of citation was always used: but it is evident that the third mode, which requires an exact knowledge of the actual beginning and end of a Jovian year and which might be used by an author, would not be in *popular* use.

102. *Fourth Mode of Citation* (4). There is a fourth mode of citation of Jovian years which we often find in Malayâlam inscriptions, and that is to cite, instead of one year out of every sixty, one year out of every twelve. In twelve Jovian years the planet Jupiter passes through the twelve signs of the zodiac and each sign corresponds to one of the twelve years of Jupiter's revolution. In the above case Jupiter having completed 9 Jovian years ‡ would be described as being in the 10th sign of the zodiac, i.e., *Makara* (Eye-table.)

103. *Fifth Mode of Citation* (5). In this the 12 Jovian years receive the names of the 12 lunar months, *Kârttika* being the first and *Asvina* the 12th. The Jovian years § (properly, months) are distinguished from lunar months by the prefix *Mahâ*. Thus, Mahâ-Kârttika, Mahâ-Mârgaśira, etc. In the example in sec. **98**, Jupiter was in Mahâ-Śrâvana.

104. *Sixth Mode of Citation* (6). This is the heliacal rising system, in which the Jovian cycle begins with the heliacal rising of Jupiter, *i.e.*, his re-appearance after a conjunction with the sun. The system is exhaustively dealt with by Mr. Dikshit in his introduction to Vol. III of Dr. Fleet's *Corpus Inscriptionum Indicarum*, and all the citations of this kind, hitherto found in inscriptions, are there collected.

105. Readers in Southern India will be mainly interested in the 1st and 4th modes of citation, of which the latter is otherwise called the "mean-sign system"§ and which is met with in Travancore inscriptions, *e.g.*, those discussed by Dr. Schram in *Indian Antiquary* Vol. XXV (1896), pp. 9—11; and by Professor Kielhorn at pp. 53, 174. *Ibid.*

We shall cite an example: "Kollam 389, Jupiter in Kumbha, and the Sun 18 days old in Mîna, THURSDAY, Pushya Nakshatra, 10th Lunar day".

Kollam 389 is equivalent, as we shall see in sec. **112** *infra* to A.D. 389 + 825 = A.D. 1214 (Indian Solar Year).

We might calculate the day of the solar year in one of two ways, either by taking the equivalent of the solar date from Table VIII or the Eye-table or by calculating the solar date of the tithi. The first is the simpler method and it gives us 335 + 18 = 353 days.

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* For convenience of reference, we use the expressions "Solar Year A.D. 1514" to mean "the Indian Solar Year which began in A.D. 1514, *i.e.*, Saka 1436=Vikrama 1571=Kaliyuga 4615, which began in March, A.D. 1514".

† The Jovian year *current* at a particular moment is, as the reader will have observed from the example already given, the Jovian year actually *completed* at that moment, omitting fractions. As no other Jovian year is ever referred to in the northern system, we need not be careful to distinguish between *expired* and *current* Jovian years, but may use the expressions as synonymous.

‡ "Jovian year" does not mean the period of revolution of Jupiter's orbit (which is a little less than 12 solar years) but one-twelfth of that period, which is roughly equivalent to a solar year.

§ In Part IV. of this book on Planetary Chronology, the reader will find a direct method of calculating either the mean or the actual sign or rasi occupied by Jupiter at any moment. (See Sec. **288**).

The Jovian equivalent of	1214 A.D. is	$31{\cdot}3217 + 14{\cdot}1638 =$	45·4855	(Sec. **98**.)
"	"	350 days is (35 days × 10) =	·9694	Table V.
"	"	3 "	·0083	do.
			46·4632	

Dividing the total equivalent by 12, we have as remainder 10·4632, *i.e.*, Jupiter has left the 10th sign and is in the 11th, *i.e.*, Kumbha (4th mode of citation). Or, we can calculate Jupiter's mean sign for 353 days of A.D. 1214 direct from Table XVII (pp. 202, 203), thus: $220{\cdot}10^\circ + 64{\cdot}86^\circ + 29{\cdot}33^\circ = 314{\cdot}29^\circ$, *i.e.*, (by Eye-Table) Jupiter was in *Kumbha.*

106. The equivalent in the Northern Cycle of the 46th Jovian year is (by Table XIV) *Pramathin* (3rd mode of citation), while in the Southern Cycle (1st mode of citation) the Jovian name for the solar year A.D. 1214 is (by Table I) *Bhava*. The Jovian year (Northern System) *current* at the beginning of the solar year A.D. 1214 was No. 45 *Bahudhanya,* which would be cited in cases where the 2nd mode of citation was in use.

CHAPTER XIV.

THE VARTTAMANA, PURNIMANTA AND KARTTIKADI SYSTEMS OF CITATION.

107. The ordinary or normal mode of citing an Indian date is by means of *gata* or 'expired' years (already explained, sec. **5** *supra*), *amanta* months (or months beginning with the first tithi after new moon or *amâvâsyâ*), and *Chaitrâdi* years (or lunar years beginning with *Chaitra*). The lunar year can begin with Chaitra only when the solar year begins with Mesha Sankrânti. Therefore a reckoning by Chaitrâdi lunar years is the same as reckoning by Meshâdi Solar Years.

108. Exceptional modes of citation, used at certain epochs of history, or still used in certain parts of India, are :—

Varttamâna, or current years, opposed to *gata* (expired); *Pûrnimânta* months, beginning with the tithi after full moon; and *Kârttikâdi* lunar years (or "southern" years) beginning with the lunar month *Kârttika.*

109. In the *Pûrnimânta* system, each month beginning with a full moon is named after the next *amânta* month, but takes in the dark fortnight preceding each new moon. It is to this system that we owe the name *paksha,* lit. a wing, the dark and bright fortnights being the wings on either side of a new moon.

110. In the *Kârttikâdi* lunar year system, the year beginning with lunar Kârttika takes the number of the Meshâdi solar year then running, and has in common with it the five months, Lunar Kârttika to Lunar Phâlguna.

Canons.

I. A *dark* fortnight in nth Amânta month is in $(n+1)$th *Pûrnimânta* month.

II. Any month or tithi in Nth year, expired, is in $(N+1)$th year *current.*

III. Any of the months named in the margin in Nth year Chaitrâdi, expired, is ascribed to the
(*a*) $(N-1)$th year *Kârttikâdi, expired,* or to
(*b*) Nth year, *Kârttikâdi, current.*

(Margin: Chaitra, Jyeshtha, Ashadha, Sravana, Bhadrapada, Asvina)

N.B.—Conversely, any of the above months in nth year *Karttikadi,* expired, is ascribed to $(n+1)$th year *Chaitradi,* expired.

For clearness' sake, we will present these three rules under three aspects, one of which, when we are in doubt, every problem before us must assume.

First Aspect.—If we have before us a dark fortnight or *bahula* tithi of the nth month in the Nth year, known to be an expired year, but do not know whether the system is *amânta* or *pûrnimânta*, we must search for the tithi both in the nth and the $(n-1)$th month in our ordinary (Amânta) tables.

Second Aspect.—If we have before us a dark fortnight or *bahula* tithi of the nth month in the Nth year, and do not know whether the month is *amânta* or *pûrnimânta*, nor whether the year is expired or current, we must, in using our tables, look for the tithi—

(1) in the nth month, Nth year, expired;
(2) in the $(n-1)$th month, Nth year, expired;
(3) in the nth month, $(N-1)$th year, expired; and
(4) in the $(n-1)$th month, $(N-1)$th year, expired.

Third Aspect.—If we have before us a dark fortnight or *bahula* tithi of the nth month (from Chaitra to Âśvina, inclusive) in the Nth year and do not know whether the month is *amânta* or *pûrnimânta*, nor whether the year is expired or current, *Chaitrâdi* or *Kârttikâdi*, we must, in using our tables, look for the tithi—

(1) in the nth month, Nth year, expired;
(2) in the $(n-1)$th month, Nth year, expired;
(3) in the nth month, $(N-1)$th year, expired;
(4) in the $(n-1)$th month, $(N-1)$th year, expired;
(5) in the nth month $(N+1)$th year, expired; and
(6) in the $(n-1)$th month $(N+1)$th year expired.

N.B.—For bright fortnight or *Sukla* dates in any month, no search need be made in any case in the $(n-1)$th month; and whether for bright or dark fortnight dates in the months of Karttika to Phalguna inclusive, no search need be made in any case in $(N+1)$th year, *expired*.

Readers who prefer Professor Kielhorn's mode of stating the same rules will find it in *Ind. Antiq.*, Vol. XIX, p. 22 or at p. 406 of *Ep. Ind.*, Vol. I. Any rules must be somewhat perplexing at first sight and should be carefully reasoned out by those interested in such investigations.

111. The Lunar year beginning with lunar Chaitra of any solar year n is itself $(n+1)$. Thus, Chaitra 1265 may mean:—

(*a*) Lunar Chaitra at the end of current solar 1264, *i.e.*, at the end of expired solar 1263.

(*b*) Do. do. do. expired solar 1264 and before the beginning of solar 1265. (expired)

(*c*) Do. do. do. do. do. 1265 and do. 1266 do.

This ambiguity is independent of the difference between Chaitrâdi and Kârttikâdi systems, and is peculiar to the lunar month Chaitra.

CHAPTER XV.

THE ERAS NOW IN USE OR MET WITH IN INSCRIPTIONS.

112. In the following Summary of Indian Eras, adapted from Cunningham and other authorities, we give in each case the formula whereby a year of each era, "expired" or "current" as the case may be, may be obtained from the A.D. year, also noting where the era is or was in use, and whether it is amânta or pûrnimânta, Chaitrâdi or Kârttikâdi and so forth.

(1) *Kaliyuga* (expired year = 3102 *minus* B.C. year; A.D. year + 3101). Used all over India as a solar (Meshâdi) and luni-solar (Chaitrâdi) year. The years in this era, with A.D., Śaka, and Vikrama equivalents, are regularly given in our Table X from B.C. 1 to A.D. 2000; and in Table XII from A.D. 1840 to A.D. 1920. For the years B.C. 3102 to B.C. 1, K.Y. 0 to K.Y. 3101, see Addendum, p. (114.)

(2) *Saptarshi* (current year = A.D. year + 76). Mostly *current* and mostly *pûrnimânta* and *Chaitrâdi*. At present in use in Kashmir and formerly in Multan and elsewhere. Quoted generally in cycles of 100 years. Thus A.D. 1910 = Saptarshi 1986, current, quoted only as "86 Saptarshi, current."

(3) *Vikrama Era* (expired year = A.D. year + 57). Extensively used at present in Guzerat and all over Northern India, except Bengal: *Kârttikâdi* and *Amânta* in Guzerat, hence called *Southern Vikrama; Chaitrâdi* and *Pûrnimânta* in N. India, hence called *Northern Vikrama*. Other names, "Malava Era"; and also simply "Samvat". The Vikrama years, expired, from B.C. 1 to A.D. 2000 are regularly shown in our Table X, and from A.D. 1840 to A.D. 1920 in our Table XII.

(4) *Saka Era* (expired year = A.D. year *minus* 78). Extensively used in India both in the past, and at present. *Meshâdi* (for solar year) and *Chaitrâdi* (for luni-solar year): generally *amânta*, but *pûrnimânta* in Northern India. Śaka equivalents of Kaliyuga and Vikrama years, expired, from B.C. 1 to A.D. 2000, are regularly given in our Table X, and from A.D. 1840 to A.D. 1920 in our Table XII.

(5) *Kollam Era* (current year = A.D. year *minus* 825). Used in Malabar, Cochin, and Travancore since A.D. 825. Begins in N. Malabar with solar *Kanya* and in S. Malabar with *Chingam* (Simha); (For memory aids, see sec. **138** *infra*); always *solar* and *current*. For years from A.D. 1840 to A.D. 1920, Kollam equivalents are regularly given in our Table XII. For previous years, the following century equivalents will be of use:—

A.D.	Kollam	A.D.	Kollam
A.D. 900 =	Kollam 75	A.D. 1500 =	Kollam 675
1000 =	„ 175	1600 =	„ 775
1100 =	„ 274	1700 =	„ 875
1200 =	„ 375	1800 =	„ 975
1300 =	„ 475	1900 =	„ 1075
1400 =	„ 575	2000 =	„ 1175

(6) *Bengali San* (or *Sen*) (current year = A.D. year *minus* 593). *Meshâdi, current solar year.* Now in use in Bengal. For A.D. 1840 to A.D. 1920, B. San equivalents are regularly given in our Table XII. For previous years the following century equivalents will be of use:—

A.D.	B.San	A.D.	B.San	A.D.	B.San
A.D. 600 =	B.San 7	A.D. 1100 =	B.San 507	A.D. 1600 =	B.San 1007
„ 700 =	„ 107	„ 1200 =	„ 607	„ 1700 =	„ 1107
„ 800 =	„ 207	„ 1300 =	„ 707	„ 1800 =	„ 1207
„ 900 =	„ 307	„ 1400 =	„ 807	„ 1900 =	„ 1307
„ 1000 =	„ 407	„ 1500 =	„ 907	„ 2000 =	„ 1407

(7) *Chedi* or *Kalachuri Era* (current year = A.D. year *minus* 247), *current, Asvinâdi, pûrnimânta.*

A.D.		Chedi		A.D.		Chedi	
A.D.	300 =	Chedi 53	current.	A.D.	800 =	Chedi 553	current.
„	400 =	„ 153	„	„	900 =	„ 653	„
„	500 =	„ 253	„	„	1000 =	„ 753	„
„	600 =	„ 353	„	„	1100 =	„ 853	„
„	700 =	„ 453	„	„	1200 =	„ 953	„

Not now in use, but was in use under the Kalachuri kings in Western and Central India.

(8) *Gupta* (current year = A.D. year *minus* 319).

A.D.		Gupta		A.D.		Gupta	
A.D.	400 =	Gupta 81	current.	A.D.	600 =	Gupta 281	current.
„	500 =	„ 181	„	„	700 =	„ 381	„

Not now in use. Was in use in Central India and Nepal in the centuries above indicated as *current, Chaitrâdi, pûrnimânta.*

(9) *Valâbhi Era* (current year = A.D. year *minus* 318). *Current, Kârttikâdi, amânta,* or *pûrnimânta.*

A.D.		Valâbhi		A.D.		Valâbhi	
A.D.	400 =	Valâbhi 82	current.	A.D.	900 =	Valâbhi 582	current.
„	500 =	„ 182	„	„	1000 =	„ 682	„
„	600 =	„ 282	„	„	1100 =	„ 782	„
„	700 =	„ 382	„	„	1200 =	„ 882	„
„	800 =	„ 482	„	„	1300 =	„ 982	„

Not now in use. Was in use in Kathiavâd and neighbourhood in centuries above indicated.

(10) *Vilâyati year* (current year = A.D. year *minus* 592). *Kanyâdi, solar, current.*

Now in use in Orissa. Months begin invariably *on* the day of Sankrânti instead of the next or the third day after [see Sec. **144** (1) *infra*].

This era bears to Bengali San pretty much the same relation that the Valâbhi bore to the Gupta era.

(11) *Amli year* (current year = A.D. year *minus* 592). *Luni-solar, current.* Lunar year changes on *Bhâdrapada sukla 12th,* i.e., some days before, or some days after, Kanyâ Sankrânti. Otherwise the same as Vilâyati. Current in Orissa. Probably bears the same relation to Vilâyati that the luni-solar year in the Telugu country bears to the solar year of the Tamil country (*i.e.*, only New Year Day is different in each case).

(12) *Fasali year* (luni-solar) in Bengal, and N.W. India (current year = A.D. year *minus* 592); *pûrnimânta and lunar Asvinâdi* (*i.e.*, it begins on pûrnimânta Âśvina, bahula pratipada); luni-solar year for Bengal, just as the Bengal San is the solar year for the same tract of country. Like all luni-solar years, the *Fasali* takes the number of the next Solar San. Thus, A.D. 1900 was, as we have seen, Bengal San 1307 current, but the luni-solar *Fasali* beginning on *Asvina krishna pratipada of* A.D. 1900 takes the number of the next Bengal San, *i.e.*, 1308 current. Hence the formula for Bengal *Fasali* is "current A.D. year *minus* 592".

(13) *Dakhan Fasli* (current year = A.D. year *minus* 593) was up to A.D. 1556 (when its number was 963, *vide* Table XV, p. 195) a Hijra year, but from that year forward it has been kept as a solar year (identical in number with Bengal San), beginning, in parts of Bombay, when the Sun enters the Nakshatra *Mrigasîra,** *i.e.* (now) about 7th or 8th June, The months, their periods of beginning, and number of days, are the same as in the Muhammadan calendar.

(14) The *Madras Fasli* year is an *agricultural, solar, tropical* year, beginning on 1 July and having no divisions of its own into months and days. Its formula is "current Fasli = A.D. year *minus* 590". The agricultural or revenue year from 1 July 1910 to 30 June 1911 might be expressed quite as well by the expression "Revenue Year 1910–11" as by the expression "Fasli 1320". The former expression would convey better sense to most people, and the expression "Fasli year", the use of which a blind tradition has consecrated in Madras, serves no other purpose than to confuse any one who is not a village karnam. It is a chronological anomaly and will no doubt gradually drop out of use.

(15) The Mahratta *Sûr-San*, *Shahûr-San* or *Arabi-San* (current year = A.D. year *minus* 599) was extensively used under the Mahratta supremacy, and is still occasionally met with. Begins, like the Dakhan Fasali, when the Sun enters the Nakshatra Mrigaŝîra.*

(16) *Harshakâla Era* (current year = A.D. year *minus* 606). Was current in Muttra (*Mathura*) in Kanauj, Nepal. Harsha 94 current = A.D. 700, and so on.

(17) *Nevar Era* (used in Nepal from A.D. 878 to A.D. 1768), *expired, Kârttikâdi, Amânta.* Formula "Nevar expired = A.D. year *minus* 879". } Nevar 21, expired = A.D. 900. Nevar 821, expired = A.D. 1700.

(18) *Chalukya Era* (expired year = A.D. year *minus* 1076). This was in use only from A.D. 1079 to A.D. 1162. It followed the Ŝaka months and pakshas. Chalukya 24 expired = A.D. 1100.

(19) *Lakshmana Sena Era :* (expired year = A.D. year *minus* 1108, according to present day almanacs). Now in use in Tirhut and Mithila, but along with the Ŝaka or Vikrama Era.

Dr. Kielhorn concludes that the formula for this era was (from A.D. 1194 to A.D. 1551). "Expired Lakshmana Sena year = A.D. year *minus* 1119". According to this formula A.D. 1200 would be equivalent to Lak. Sena 81 expired. The years of this era were *expired, Kârttikâdi, amânta.*

(20) *Mahratta Raja Saka Era* (current year = A.D. year *minus* 1673) was established on the accession of Ŝivâji : the number of the year used to change every *Jyeshtha sukla trayodasî*, which was the tithi or date of Ŝivâji's accession. Otherwise same as southern luni-solar amânta Ŝaka years.

(21) *Tarikh-i-Ilahi* (= mighty or divine era), dating from the accession of Akbar (14th February 1556), fell into disuse *temp.* Shah Jehan. Days and months were solar, without intercalations.

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* By Eye-Table, the Sun enters Nakshatra Mrigasira when his longitude is 53° 20′. The number of days corresponding to this (by Table XVII-A) = 56. When the solar year commences (as it did in A.D. 1911) on 13th April, the sun's entry into Mrigasira Nakshatra would be on 56 + 13 = 69 days from 1st April, *i.e.*, (Table VIII) on 8 June.

CHAPTER XVI.

NOTES ON TITHIS IN RELATION TO FESTIVALS.

113. Day on which a festival is celebrated.—As a *tithi* generally covers a portion of two days, it sometimes happens that though for civil purposes the tithi of a day is that which is current at sunrise, yet for religious purposes a tithi may have to be celebrated on the previous day when it begins. When a tithi is appointed for the celebration of a feast or fast, to be kept at forenoon, midday, late afternoon, midnight, etc., it is obvious that the feast or fast must be observed on the day when the tithi covers the prescribed part of the day. The day for such purposes is divided, first of all, into five portions *between sunrise and sunset.*

(1) *Prâtahkâla*, or early forenoon, 6 ghaṭikas from sunrise.
(2) *Samjava*, or forenoon, 6 to 12 ghaṭikas from sunrise.
(3) *Madhyâhna*, or midday, 12 to 18 ghaṭikas from sunrise.
(4) *Aparâhna*, or afternoon, 18 to 24 ghaṭikas from sunrise.
(5) *Sâyâhna*, or late afternoon, 24 to 30 ghaṭikas from sunrise.

(*a*) The 4 ghaṭikas before sunrise are called *arunodaya* or rise of dawn.
(*b*) The 6 ghaṭikas after sunset are called *pradosha* or evening.
(*c*) The 2 ghaṭikas in the middle of the night are called *nisitha*, midnight.
(*d*) A tithi is *pûrvaviddha* when it commences more than 4 ghaṭikas before sunset of one day and ends before sunset of the following day; a festival on such a tithi is celebrated on the first day of the tithi, not on the second.

N.B.—**Tithi dvayam** :—Two tithis meeting, *i.e.*, one commencing, and the other ending, between 18 and 24 ghatikas after Sunrise, when a similar meeting does not take place next day.

114. Festivals connected with Nakshatras as well as Tithis.—On the Nakshatra Śravishta (No. 23) in Lunar Śrâvana, the ceremony of Upakarma (Âvani Avittam) is celebrated. Our Table XI shows that this festival would ordinarily fall about full moon in Śrâvana. In the same manner, all festivals associated with particular *nakshatras* may be equally well connected with particular *tithis*. In Southern India, however, it is usual to connect *nakshatra* festivals with certain solar months in which they are celebrated; e.g., *Panguni Uttaram* (i.e., *Uttara Phalgunî* Nakshatra in the Solar month called *Panguni*), *Chittirai Mûlam* (i.e., *Mûla* Nakshatra in the Solar month called *Chittirai*); *Avani Avittam* (*vide supra*), etc. *Tithi* festivals are also often connected in Southern India with Solar Months ; and if a festival falls, for instance, on *sukla* panchamî in a particular Solar Month, and there are two Śukla panchamîs in that month, the first is called *Sûnya tithi* and the second only is celebrated.

115. Most Hindu festivals are associated in the first place with *tithis*, and the following notes for which we are chiefly indebted to Prof. Kielhorn's article in Vol. XXVI of the *Indian Antiquary*, pages 177—187, will be of interest to Hindu readers as well as to others. Prof. Kielhorn described the Hindu festivals in order of the lunar months: by way of variation, we will discuss them in the order of tithis. Our arrangement will enable the reader to locate at once an *ashtamî* or an *ekâdasî*, although the month is, as usual, suppressed in such citations.

PRATIPADA (TITHI I).

The **Chaitra** Sukla *pratipadâ,* i.e., that which precedes the Mesha Sankrânti, is the beginning of the Hindu Lunar year, New Year's Day (Lunar) being that on which the pratipadâ is current at sunrise. (When there is an *Adhika Chaitra,* that begins the year). The tithi is therefore called *Vatsarârambha* (commencement of the year). It is also *Navarâtrârambha,* there being another *Navarâtrârambha* on *Asvina sukla pratipadâ.*

Karttika Śukla 1 is *Balipratipadâ* or *Bali pûja* and it is pûrvaviddha as to time.

Bhadrapada bahula 1 is *Mahâlayârambha.*

Phalguna bahula 1 is *Vasantotsava.*

DVITIYA (TITHI II).

Ashada Śukla 2 is *Ratha-yâtra dvitîyâ* or *Râma-rathotsava.*

Karttika Śukla 2 is *Yama dvitîyâ* or *Bhrâtri-dvitîya* (because sisters make presents to brothers), and the time is afternoon.

The bahula dvitiya in **Ashada, Sravana, Bhadrapada** and **Asvina** is called *Asûnyasayana-vrata* and the fast is broken at moon-rise.

TRITIYA (TITHI III).

Chaitra Śukla 3 is *Gaurî-tritîyâ ;* also *Matsa-jayantî ;* (afternoon); also *Manvâdi* (forenoon).

Vaisakha Sukla 3 is *Kalpâdi* (forenoon); *Tretâyugâdi* (forenoon); *Akshaya-tritîyâ* (especial, when combined with Wednesday and Nak. Rohinî; time, forenoon); also *Parasurâma jayantî.*

Jyeshtha Śukla 3 is *Rambhâ-tritîyâ,* when Bhavâni is worshipped at *purvaviddha.*

Sravana Sukla 3 is *Madhu-sravâ* in Guzerat.

Sravana bahula 3 is *Kajjalî-tritîyâ.*

Bhadrapada Sukla 3 is *Varâha-jayantî* (afternoon); *Haritâlikâ,* when Parvati is worshipped; *Manvâdi* (forenoon). The tithi is by some called *Sivâ.*

Phalguna bahula 3 is *Kalpâdi* (afternoon).

CHATURTHI (TITHI-IV).

The Sukla Chaturthî in **every month** is called *Ganesa Chaturthî* or *Vinâyaka Chaturthî,* the chief being *Mâgha Chaturthî* (*Ganesa jayantî*). It is celebrated at midday. *Tila Chaturthî* is another name for **Magha** Śukla *chaturthî.* It is performed in the evening *Kunda Chaturthî* is another name for the same festival.

Bhadrapada Sukla Chaturthî is special when it falls on Sunday or Tuesday.

Similarly, the bahula Chaturthî in **every month** is *Sankashtachaturthî* and is a fast day for people in difficulties: the fast is broken at moonrise which is the time. This Chaturthî is called *Angâraka Chaturthî* if it falls on Tuesday, and continues till moonrise.

Sravana bahula Chaturthî is called, par excellence, **Bahula** *Chaturthî* and cows are then worshipped.

PANCHAMI (TITHI V).

Chaitra Sukla 5 is *Sri Panchamî* according to some: it is also *Kalpâdi* (forenoon).

Sravana Śukla 5 is *Nâga Panchamî* and snakes are then worshipped. If tithi begins within 6 ghaṭikas after Sunrise of one day and ends within 6 ghaṭikas after Sunrise on the next day, the tithi is celebrated on the former day and that is Nâga Panchamî.

Bhadrapada Sukla 5 is *Rishi Panchamî* (midday).

Asvina Sukla 5 is *Lalitâ Panchamî* or *Upânga-lalitâ-vrata,* when Durgâ is worshipped in the afternoon.

Margasira Śukla 5 is *Nâgapûja* or *Nâgapanchamî.*

Magha Śukla 5 is *Vasanta panchamî*, when Rati and Kâma are worshipped in forenoon. *Srîpanchamî* is another name.

Phalguna bahula 5 is *Ranga panchamî*, when colours are thrown about.

SHASHTHI (TITHI VI).

Sravana Śukla 6 is *Kalki-Jayantî* (sunset), the last avatâra of Vishnu.

Sravana bahula 6 is *Hala-Shashthî.*

Bhadrapada Śukla 6 is *Sûrya-Shashthî* or *Skanda-Shashthî.*

Bhadrapada bahula 6 is Chandra *Shashthî.* It is called *KAPILA-SHASHTHI* when it combines on **Tuesday** with Nak. Rohinî and Yoga Vyatîpâta and the Sun is in Hasta. (See Sec. **54**).

Karttika Śukla 6 is special for feeding of Brahmans when it falls on Tuesday.

Margasira Śukla 6 is *Skanda-Shashthî* or *Mahâ-Shashthî; Champâ-Shashthî,* when Siva is worshipped as Khandoba. This tithi is special when it falls on Sunday or Tuesday and combines with Nakshatra Satabhishaj and Yoga Vaidhriti, or either of the two.

[*N.B.*—Our Table XI shows that Nak. Satabhishaj (No. 24) may concur with the tithi in a year in which some month before Margasira is 'adhika'; but Yoga Vaidhriti (No. 27) can never concur with this tithi.]

SAPTAMI (TITHI VII).

A *Saptamî* on Tuesday, combined with Nak. Revati (that is, by Tab. XI, **bahula** 7 in Âshâdha or **Sukla** 7 in Pausha or Mâgha) is very auspicious. A *Sukla saptami*, falling on Sunday, is called *VIJAYA*, and is special for donations. A *Sukla saptami*, joined with the 1st quarter of Nak. Hasta, is called *BHADRA.* A *Sukla saptami*, coinciding with a Sankrânti is called *MAHAJAYA*, which, for making donations, is superior even to an eclipse.

Vaisakha Śukla 7 is *Gangâ-Saptamî* or *Gangotpatti* (birth of Gangâ—midday).

Sravana bahula 7 is *Sîtalâ-Saptamî* or *Sîtalâ-Vrata,* time *purvaviddha.*

Bhadrapada Sukla 7 is called by some *Aparâjitâ.*

Asvina Śukla 7 : about this tithi *Sarasvatî* is worshipped under Nakshatra Mûla.

Karttika Śukla 7 is *Kalpâdi* (forenoon).

Margasira Śukla 7 is *Sûryavrata.*

Magha Śukla 7 is *Ratha-Saptamî* or *Mahâ-Saptamî* (time, *arunodhaya*); *Manvâdi* (forenoon).

ASHTAMI (TITHI VIII).

An *Ashtamî*, falling on Wednesday, is special and receives the name of *Budhâshtamî.* The *Sukla-Ashtamî* in **every month** is sacred to Durgâ or Annapuranî; while the *Bahula-Ashtamî* in **every month**, called *Kâlâshtamî*, celebrated at purvaviddha, is sacred to Krishna.

Chaitra Śukla 8 is *Bhavâni-utpatti:* when joined with Wednesday and Nak. Punarvasu, bathing on this tithi is special.

Sravana bahula 8: *Janmâshtamî, Krishnâshtamî* or *KRISHNA JAYANTI* (midnight); special when combined with Nak. Rohinî; less so, when joined only to *Monday* or *Wednesday; Manvâdi* (afternoon).

Bhadrapada Sukla 8 : *Jyeshthâ-Gaurî-pûjana-vrata,* when moon is in Nak. *Jyeshthâ.*

Bhadrapada bahula 8 : *Mahalakshmî vrata* (purvaviddhâ); *Ashtaka-srâddha.*

Asvina Śukla 8 is *Mahâshtamî* and is special, when joined to Tuesday.

Karttika Śukla 8 is *Gopâshtamî*, when cows are worshipped.

Do. bahula 8 is *Krishnâshtamî*, *Kâla-Bhairavâshtamî*, or *Kâla-Bhairava-jayantî.*

Margasira bahula 8 is *Ashtaka-srâddhâ* in the afternoon. The same is the case with bahula 8 in **Pausha, Magha** and **Phalguna.**

Pausha Śukla 8 is special when joined to Wednesday and Nak. Bharani (Rohini or Ârdhra, according to some).

Magha Śukla 8 is *Bhîshmâshtamî* and is celebrated at midday.

Magha bahula 8 is Birth of Sîtâ.

NAVAMI (Tithi IX).

Chaitra Śukla 9 is *Râma-navamî* or *Râma-jayantî*, at midday.

Bhadrapada do. is *Aduhkha-navamî.*

Asvina do. is *Mahâ-navamî* or *Durgâ-navamî* : Manvâdi (forenoon).

Karttika do. is *Kretayugâdi* (forenoon).

Margasira do. is *Kalpâdi* (forenoon).

Magha bahula 9 is *Râmadâsa Navamî.*

DASAMI (Tithi X).

Jyeshtha Śukla 10 is *Dasa-harâ* (expiating ten sins) (see Sec. **54**) or *Gangâvatâra.*

Ashada do. is *Manvâdi* (forenoon).

Asvina do. is *Vijayadasamî* or *DASARA* (afternoon; special with Nak. Sravana); *Buddha-jayantî.*

EKADASI (Tithi XI).

Every *Ekâdasî* is sacred, like every *Amâvâsyâ*, and receives a special name. It is called **Vijaya** when joined with the Nak. *Punarvasu.* The following are the names of the 24 Ekâdasîs :—

Month Sukla.	*Bahula.*	*Month Sukla.*	*Bahula.*
Chaitra.—*Kâmadâ Ekâdasî.*	*Varûthinî ekâdasî.*	**Bhadrapada.**-*Vishnu parivartanotsava* or Parivartinî Ekâdasî. (Vishnu turning on his side : called **Vishnu srinkhala,** when 11th and 12th tithis meet in Nakshatra *Sravana.*	*Indirâ Ekâdasî.*
Vaisakha.—*Mohinî do.*	*Aparâ do.*		
Jyeshtha.—*Nirjalâ do.*	*Yoginî do.*		
Ashada.—*Vishnusayanotsava ; Sayani* or *Vishnusayani Ekâdasî* (*i.e.*, Vishnu going to sleep).	*Kâmadâ* or *Kâmikâ Ekâdasî.*		
Sravana.—*Putradâ Ekâdasî.*	*Ajâ Ekâdasî.*		

Month Sukla.	*Bahula.*	*Month Sukla.*	*Bahula.*
Asvina.—*Pâsânkusâ Ekâdasî.*	*Ramâ Ekâdasî.*	**Pausha.**—*Putradâ Ekâdasî* or *MUKKOTTI* or *VAIKUNTHA EKADASI* *Manvâdi* (forenoon).	*Shattilâ Ekâdasî.*
Karttika.—*Prabodhini Ekâdasî* (Waking of Vishnu), *Bhishmapanchaka vrata* commences.	*Utpatti Ekâdási.*	**Magha.**—*Jayâ Ekâdasî.*	*Vijayâ Ekâdasî.*
Margasira.—*Mokshadâ Ekâdasî.*	*Saphalâ Ekâdâsî.*	**Phalguna.**—*Amalakî Ekâdasî.*	*Pâpamochinî Ekâdasî.*

DVADASI (Tithi XII).

The *Dvadasi* is called *Mahâ-dvâdasî* in the following circumstances :—

11th Tithi current at sunrise on two successive days : the next Dvâdaśî is called **Unmilani.**

12th Do. do. do. do. : the Dvâdaśî is called **Vanjuli.**

12th Tithi, to be followed by a full moon or a new moon tithi, current at two sunrises —**Pakshavardhini.**

12th Tithi, joined with Nakshatra *Pushya*, is **Jaya** [*i.e.*, by Tab. XI, Bahula 12 in Bhâd ; or Sukla 12 in Phâlg. or Chait.]

Do. do. do. do. do. *Sravana* is **Vijaya** [*i.e.*, by Tab. XI, Śukla 12 in Bhâd., Asv. ; Bahula 12 in Phâlg.]

Do. do. do. do. do. *Punarvasu* is **Jayanti** [*i.e.*, by Tab. XI, Śukla 12 in Phâlg. ; Bahula 12 in Śrâvana].

Do. do. do. do. do. *Rohinî* is **Papanasini** [*i.e.*, by Tab. XI, Śukla 12 in Pausha, Mâgha ; Bahula 12 in Âshâḍha].

Vaisakha Śukla 12, joined with Nak. *Hasta*, and Jupiter and Mars in *Simha*, Sun in *Mesha*, is *VYATIPATA*.

Ashada Śukla 12 is the commencement of *Châturmâsya vrata.*

Sravana do. is *Vishnoh-pavitrâ-ropanam.*

Bhadrapada do. is *Vâmana jayantî* (midday) ; called **Sravana Dvadasi,** when joined with Nak. *Sravana,* and specially, when further joined with *Wednesday.*

Asvina bahula 12 is *Govatsa Dvâdasî* (evening).

Karttika Śukla 12 (1) end of *Châturmâsya vrata*, which began on same tithi in Âshâḍha.

(2) *Prabodhotsava* or *Utthâna dvâdasî* (preparation for waking Vishnu).

(3) *Tulasi vivâha* (marriage of Vishnu with the Tulasi plant).

(4) *Manvâdı* (forenoon).

Magha Śukla 12: *Bhîshma dvâdasî.*

Do. bahula 12: **Tila dvadasi** or **Vijaya**, when combined with Nak. *Sravana.*

[*N.B.*—This can only happen when a month previous to *Magha* is Adhika—See Table XI.]

TRAYODASI (Tithi XIII).

Chaitra Śukla 13: *Madana trayodasî* or *Ananga Pûjana vrata* (purvaviddha); god of Love worshipped.

Bhadrapada bahula 13: (1) *Kaliyugâdi* (afternoon).

(2) **Magha trayodasi**, when combined with Nak. *Magha.*

(3) *GAJACHAYA*, when joined to Nak. *Magha* and Sun in *Hasta.*

Asvina bahula 13: *Dhana trayodasî*, when money lenders worship money.

Magha Sukla 13: *Kalpâdi* (forenoon).

Phalguna bahula 13: (1) **Varuni**, when joined with Nak. *Satabhishaj.*

(2) **Mahavaruni**, do. do. do. + *Saturday.*

(3) *MAHA-MAHA-VARUNI* when joined with Nak. *Satabhishaj* + *Saturday* + Yoga *Subha.*

[*N.B.*—Combinations (1) to (3) can happen only when Phalguni or some previous month is Adhika—See Table XI.]

CHATURDASI (Tithi XIV).

Bahula Chaturdasî in **every month** is *Sivarâtri.*

Vaisakha Sukla 14: *Narasimha jayantî* (sunset): special when joined to Nak. **Svati** + *Saturday.*

Sravana Śukla 14: *Varalakshmî vrata.*

Bhadrapada Śukla 14: *Ananta chaturdasî.*

Asvina bahula 14: *Naraka chaturdasî* (moonrise), fasting to avoid *naraka* or hell. Dîpavali (see *Asvina amâvâsyâ* below), may fall on this tithi if joined to Nak. Svâti.

Karttika Śukla 14: *Vaikunta chaturdasî* (midnight).

Margasira Śukla 14: *Pâshâna chaturdasî.*

Magha bahula 14: *MAHA SIVARATRI* (midnight, when Nak. Sravana is current).

Special, when, combined with *Sunday* or *Tuesday* and Yoga *Siva.*

[N.B.—*Yoga Siva can combine with Sivaratri only when some month previous to Magha is Adhika*. See Table XI.]

SUKLA PANCHADASI (Tithi XV): Sukla 15 or Full Moon (*Pûrnimâ*).

A Śukla 15 or Pûrnimâ is called *Somavatî* when it falls on Monday and is special for donations.

It is called **Chudamani** when it is *further* joined with a lunar eclipse.

Most pûrnimâs receive special names, which are given below:—

Chaitra pûrnimâ: (1) *Manvâdi* (forenoon).
(2) *Hanumat-jayantî.*
(3) Special for bathing, when combined with Sunday, Thursday or Saturday.

Vaisakha pûrnimâ: *Kûrma jayantî* (late afternoon).

Jyeshtha pûrnimâ: (1) *Manvâdî* (forenoon).
(2) *Vata pûrnimâ* or *Vata Sâvitrî* (purvaviddhâ).
(3) **Maha-jyaishthi,** when Moon and Jupiter are in Nak. *Jyeshthâ* and Sun in Rohinî.

Ashada pûrnimâ: (1) *Manvâdi* (forenoon).
(2) *Sivasayanotsava*, or *Kokilâ-vrata* or *Vyâsapûjâ.*

Sravana pûrnimâ: (1) *Rig-yajuh-Srâvanî* (*i.e.*, Srâvana for followers of Rig and Yajur Vedas).
(2) *Rakshabandhana* (tying a string round the arm) or *Raki-pûrnimâ* or *Nâralî pûrnimâ* (throwing cocoanuts into the sea).
(3) *Hayagriva jayantî.*

Bhadrapada pûrnimâ: *Praushthapadî pûrnimâ* or *srâddha.*

Asvina pûrnimâ: (1) *Kojâgarî pûrnimâ* or *Kojâgara vrata* (midnight). Lakshmi and Indra worshipped; games of chance.
(2) *Navânna pûrnimâ,* when new grain is cooked.

Karttika pûrnimâ: (1) *Manvâdi* (forenoon).
(2) *Châturmâsya vrata* ends.
(3) *Tripurî pûrnimâ* or *tripurotsava.*
(4) Special, when joined to Nak. **Krittika.**
(5) **Maha karttiki,** when joined to Nak. *Rohini*; or when Moon and Jupiter are both in Nak. *Krittika.*
(6) *Padmakayoga,* when Moon is in Nak. *Krittika* and Sun in Nak. *Visâkha.*
(7) *KRITTIKA* festival in Southern India.

Margasira pûrnimâ: (1) *Datta treya* or *Datta-jayantî* (evening).
(2) Special for donations of salt, when joined to Nak. **Mrigasira.**

(3) **Ardra** festival in honour of Śiva at Chidambaram and elsewhere. Siva, in his incarnation of Nateśa, is said to have been born on Mârgaśîra Pûrnimâ under the Nakshatra *Ardra:* the combination could take place only when some month previous to Màrgaśîra was *adhika.* (See Table XI).

Magha pûrnimâ: **Maha-Maghi,** when Moon and Jupiter are both in Nak. **Magha.**

Phalguna pûrnimâ: (1) *Manvâdi* (forenoon).

(2) *Holikâ* or *Hutâsani pûrnimâ* (evening).

(3) *Kâman Pandigai* (destruction of Cupid by Śiva) in South India.

Bahula Panchadasi (Tithi XV): **AMAVASYA—New Moon.**

A Solar Eclipse on Sunday is **Chudamani**, and is special for donations.

Amâvâsyâ at the end of **Sravana** and beginning of **Bhadrapada:** *Pithori* or *Kusotpâtinî.*

Do,	do.	**Bhadrapada**	do.	**Asvina**: *Sarvapitri* or *MAHALAYA ÂMAVASYA:* special when Sun and Moon are both in Nak. *Hasta.*
Do.	do.	**Asvina**	do.	**Karttika** is *DIPAVALI*, with previous and following tithis: that on which Nak. is *Svâti* being the special day.
Do.	do.	**Pausha**	do.	**Magha** (1) **ARDHODAYA,** when joined with *Sunday* in day time + Nak. *Sravana* + Yoga Vyatîpâta. [*N.B.*—This can only happen when some month previous to Magha is Adikha. See Sec. **54**]. (2) **Mahodaya** when any one of these special features is wanting.
Do.	do.	**Magha**	do.	**Phalguna**: (1) Dvâparayugâdi (afternoon). (2) Special for Srâddhas, when joined with Nak. *Satabhishaj* or Nak. *Dhanishtha.*
Do.	do.	**Phalguna**	do.	**Chaitra**: *Manvâdi* (afternoon).

CHAPTER XVII.

MODERN EQUATIONS FOR LUNAR INEQUALITIES.

116. In compliance with a desire expressed by many persons interested in the *Drig-ganita* system, it has been thought advisable to include in the present work three very simple tables (XVI-A, XVI-B and XVI-C) for correcting the ending moments of tithis worked out according to the *Sûrya-Siddhânta,* so as to bring them within 2 ghaṭikas of *Drig-ganita* or *Nautical Almanac* results, further approximation not being possible within the limits of a popular work. Seeing that Siddhânta and Drig-ganita panchângams occasionally exhibit a divergence of 17 ghaṭikas (7 hours) in regard to tithis intermediate between new-moon and new-moon, the approximations now made possible will go a great way towards leading to a better understanding between the followers of the two systems.

117. Modern Astronomers use five principal equations in order to determine the moon's actual, from her mean, elongation (or tithi). These are (1) the sun's equation of the centre, (2) the moon's equation of the centre, (3) the moon's evection, (4) the moon's variation, (5) the moon's annual equation. Of these (5) is already included in the sun's equation and both are given together in Tables IX-*c* and IX-*h*, (4) depends only on the tithi and is given in the last column of Table XVI-A, while (2) and (3) are given respectively in Tables XVI-B and XVI-C.

118. The example given below will show clearly how Table XVI is to be used, but it will be useful to bear in mind the following rules :—

Rule (1) Table IX gives *equated anomalies* (as explained in sec. **251**) for *mean* tithis, *i.e.*, each anomaly given in Table IX–*a*, *b* and *g*, for the moon, contains the equation which has to be separated before applying the equation to the *mean* tithi, whereas the anomaly given in Tables XVI–B and XVI–C is a *mean* anomaly for the *actual* moment of the tithi. The principle of the method is to work until the equation obtained from the *equated* anomaly of Tables IX–*a*, *b* and *g*, is equal to the equation obtained from the *mean* anomaly in Tables XVI–B and XVI–C. Accordingly, Table XVI enables us to ascertain an ending moment not *per saltum*, but gradually and by successive approximations, using the equated anomalies of Tables IX *a*, *b* and *g*, as our base.

Rule (2). Tables XVI-B and XVI-C apply, as they stand, only to the first quarters (0 d. 0 gh. 0 p. to 6 d. 53 gh. 20 p.) of the anomalistic month, when the equations are **negative**. For the 2nd quarter (6 d. 53 gh. 20 p. to 13 d. 46 gh. 40 p.) the equation is **negative**, and the argument should be obtained by deducting the given anomaly *from* 13 days 46 ghat. 40 palas. For the third quarter (13 days 46 gh. 40 p. to 20 d. 40 gh. 0 p.) the equation is **positive** and the argument should be obtained by deducting 13 d. 46 ghat. 40 palas *from* the given anomaly. For the fourth quarter (20 d. 40 gh. 0 p. to 27 d. 33 gh. 17 p.) the equation is **positive** and the argument is obtained by deducting the given anomaly *from* 27 days 33 ghat. 17 palas.

Rule (3). On account of differences between Indian and European astronomical constants, 45 palas have to be added to the moon's mean elongation or tithi and 14 ghaṭikas to the moon's mean anomaly. These corrections are applicable from the year A.D. 1800 to the year A.D. 2000.

Example.

119. To find the ending moment of *bahula Shashthi* (21st tithi), **Nija Sravana** A.D. 1909.

	d.	gh.	pal.	☉'s Anomaly. d.	gh.	pal.	☾'s Anomaly. d.	gh.	pal.
According to the Ephemeris for A.D. 1909 (Table XII), Mean new-moon of Nija Srâvana was on Aug. ...	16	20	46	125	23	49	10	18	19
Add equivalent of 21 tithis (*bahula shashthi*) ...	20	40	17	20	40	17	20	40	17
Add (for diff. between Ind. and Eur. constants)...			+45					+14	
	37	1	48	146	4	6	31	12	36
☉'s Eqn. for 146 d. 4 gh. (Table IX-*h*)—9gh. 40p.				Ded. 1 an. month.			27	33	17
☾'s Variation for Shashthi (Table XVI-A)—1gh. 43p.							3	39	19
							—	11	23
—11gh. 23p. (**A**)							3	27	56
☾'s Anom. for 3 days 27gh. 56p. by Table IX-*g* is —16gh. 40p. (**B**)							—	16	40
						(**C**)	3	11	16

	d.	gh.	p.
The argument for Table XVI-B is the given moon's anomaly (C):—	3	11	16
Do. Table XVI-C is 2 (☾'s—☉'s long.)—☾'s Anom.			
Now, 2 (☾'s—☉'s long.) for 6 tithis is given in Table XVI-A as either 11d. 7gh. 19p. or 38d. 34gh 36p.	11	7	19
The given ☾'s anom. has to be deducted from either of these data	3	11	16
	7	50	3
Since the last anomaly is in the second quarter, we deduct it from [*vide* Rule (2) *supra.*]	13	46	40
	5	56	37 (**D**)

This is the argument for Table XVI-C.

The equation acc. to Table XVI-B. for 3d. 11gh. 16p. is —20gh. 33p.

Do. do. Table XVI-C. for 5d. 56gh. 37p. is — 6gh. 27p.

Total... —27gh. 0p. (**E**)

We compare the last equation (E) with (B) found *supra* from Table IX-*g* (*i.e.*, 16gh. 40p). Clearly, our Sûrya Siddhânta equation is too small and we must try again with—27gh. 0p. (E) in lieu of 16gh. 40p. (B). That is, we must diminish the argument for Table XVI-B by 10gh.20p and increase the argument for Table XVI-C by the same amount.

Our new arguments for Table XVI-B will be 3d. 0gh. 56p. and its eqn.—19gh. 38palas.

Do. do. Table XVI-C will be 6d. 6gh. 57p. and its eqn.— 6gh. 30palas.

Total... —26gh 8p. (**F**)

This time we began with —27 gh. (E) and ended with —26 gh. 8 p. (F) which shows that our last argument for Table XVI-B must be increased by 1 gh. and our last argument for Table XVI-C correspondingly diminished.

Our new argument for Table XVI-B is 3d. 1gh. 56p. and its equation —19gh. 43p.

Do. do. Table XVI-C is 6d. 5gh. 57p. — 6gh. 30p.

—26gh. 13p. (**G**)

We began with – 26gh. 8p. and ended with – 26gh. 13p. (G).

We may be satisfied with this result. Our final equation will be – 26gh. 13p.

(1) Sun's equation of the centre and ☾'s annual eqn. + Variation	—11gh. 23p.
(2) Moon's do. do. and ☾'s evection	—26gh. 13p.
	—37gh. 36p.

This being deducted from our mean tithi, we have

mean tithi or elongation	Aug. 37.	1gh. 48p.
		– 37gh. 36p.
	Aug. 36.	24gh. 12p.
To which *add* for local time (Table XIII); 1651″ =		1gh. 9p. (Lat. 13°, 146th day).
	Aug. 36 or Sep. 5,	25gh. 21p.

which is about 2 ghaṭikas in excess of the time given in Drig-ganita panchângams for the year *Saumya* (A.D. 1909—10), whereas the Siddhânta panchângams give 12 or 13 ghaṭikas more as the ending moment of bahula Shashṭhi in Nija Śrâvana of that year.

120. Ordinarily, the greatest difference between Siddhânta and *Drig-ganita* panchângams occurs from the 6th to the 10th tithis. For the reason of this divergence, the reader is referred to the article on the *Moon* in the *Encyclopedia Britannica*, where we are told that ancient astronomers were unacquainted with the evection and variation, as perturbing elements of the lunar theory.

121. If the reader wishes to know how *Ḋrig-ganita* panchângams obtain their tithis from the *Nautical Almanac*, we may state the process in a very few lines :—

Taking the above example, we look out in the *Nautical Almanac* the ⊙'s and ☾'s longitude at Greenwich mean noon on two or three neighbouring days, say 4th, 5th and 6th September 1909.

(1) September 1909.	(2) ☾'s long. at noon.			(3) ☾'s long. at noon.			(4) ☾'s elongation.			(5) ☾'s elngation for 24 hrs.		
	°	′	″	°	′	″	°	′	″	°	′	″
4	41	14	39·3	161	17	19·1	240	57	20·2			
5	55	25	16·2	162	15	29·9	253	9	46·3	12	12	26·1
6	69	11	33·6	163	13	42·8	265	57	50·8	12	48	4·5

Columns 2 and 3 of this table are extracted from the *Nautical Almanac* for 1909. Column 4, Moon's elongation, is of course column 2 *less* column 3, and the difference between the elongations of two successive days is entered in column 5. The tithi we want is Bahula Shashṭhi, *i.e.*, the 21st tithi which ends when the Moon's elongation is 21 × 12° = 252°. This, we find, was sometime before Greenwich noon on 5 September 1909. Since the Moon's exact elongation at Greenwich noon on 5th September 1909 was 253°.9′46·3″ which is 1° 9′ 46·3″ (= 1·1628°, by Table XIX) more than we require, we have to deduct the time taken by the Moon to effect this elongation. This last time may be determined by working out a proportion either to the elongation of the previous 24 hours (12° 12′ 26·1″ = 12·2072° by Table XIX) or to the elongation of the next 24 hours (12°48′ 4·5″ = 12·8011° by Table XIX). The result is (1) $\frac{1·1628}{12·2072}$ = ·0953 day, or (2) $\frac{1·1628}{12·8011}$ = ·0908 day.

If we deduct the first result from Greenwich noon, we have September 4·9048, to which we add ·4605 day for the difference between Greenwich astronomical and Ujjain Lankâ time, and again add 1651 seconds or 27½ minutes or ·0190 day for the difference between Ujjain time and Madras time (Table XIII; lat. 13°, 146th day). Net result, September 4·9048 + ·4605 + ·0190 = September 5·3843 or 23 ghat. 4 palas on 5th September 1909.

On the other hand, if we deduct the second result, ·0908 day from Greenwich noon, 5th September 1909, we have September 4·9092 to which we add, as before,

+ ·4605

+ ·0190

and also (for Madras standard time) 9 minutes + ·0062, and

we have, as the final result, September 5·3949

or (by Table XIX) **23** ghaṭikas **40** palas, which differs by only 13 palas from the result given in the Nungumbaukam Panchângam.

Our working shows that a difference of about 15 palas might result according as we took the proportional part from the elongation of the previous or of the following 24 hours.

122. This is very much in favour of the *Drig-ganita* method, even if exact astronomical accuracy is wanted, and that method only postulates the possession of a Nautical Almanac. In the absence of a Nautical Almanac, or for years long past or a long way ahead, we can obtain a very fair approximation to Nautical Almanac results by means of the modern equations in our Table XVI.

CHAPTER XVIII.

THE MUHAMMADAN YEAR.

123. The Muhammadan Era, commonly called *Hejra* or *Hijra*, is dated from Friday, 16 July, 622 A.D., the day of the Flight of the Prophet.

The Muhammadan calendar is not luni-solar like the Indian Calendar, but strictly lunar. The length of the synodical month according to the Muhammadan calendar is 29 days 12 hours 44 minutes. The 3 seconds reckoned in addition in the Hindu calendar are neglected in the Muhammadan. The months are alternately 29 and 30 days long, which, again, if carried out uniformly, would result in an error of 44 minutes per month, which, in 360 months, or 12 lunar years, would amount to $\frac{360 \times 44}{60 \times 24} = 11$ days. These 11 days are accordingly added to the last month of the calendar in 11 out of every 30 years, and the year containing an extra day is, from analogy, sometimes called a leap year.

124. Every 30 years form a cycle in the Muhammadan calendar. The years which have 355 days, instead of 354, are in some countries the 2nd, 5th, 7th, 10th, 13th, 15th, 18th, 21st, 24th, 26th and 29th. Elsewhere, the 2nd, 5th, 8th, 10th, 13th, 15th, 19th, 21st, 24th, 27th and 29th are kept as leap years.

It will be noticed that the difference of usage is as regards the 8th, 19th and 27th years in each cycle.

Our Muhammadan Calendar (Table XV) assumes that the 8th, 19th and 27th years in each cycle are leap years, and in paragraph 4 of the explanation at page 197 of the Tables we have shown clearly how Table XV should be used by those who observe the 7th, 18th and 26th years in each cycle as leap years.

125. All the books that deal with the Muhammadan Calendar mention the above difference of usage, but they do not give the reason of it. The reason is, however, not far to seek.

If we write down the accumulated error which remains at the end of each year by reason of the neglect to take account of 44 minutes, which we adverted to in the first section of this chapter, we obtain the following result under the system of reckoning the 8th, 19th and 27th as leap years :—

Year.	Error.	How error is corrected by leap year.
1st year,	8 hrs. 48′	
2nd year,	17 hrs. 36′	1st day added by leap year.
3rd year,	2 hrs. 24′	
4th year,	11 hrs. 12′	
5th year,	20 hrs. 0′	2nd day added by leap year.
6th year,	4 hrs. 48′	
7th year,	13 hrs. 36′	
8th year,	22 hrs. 24′	3rd day added by leap year.
9th year,	7 hrs. 12′	
10th year,	16 hrs. 0′	4th day added by leap year.
11th year,	0 hrs. 48′	
12th year,	9 hrs. 36′	
13th year,	18 hrs. 24′	5th day added by leap year.
14th year,	3 hrs. 12′	
15th year,	12 hrs. 0′	6th day added by leap year.
16th year,	*Nil.*	
17th year,	5 hrs. 36′	
18th year,	14 hrs. 24′	
19th year,	23 hrs. 12′	7th day added by leap year.
20th year,	8 hrs. 0′	
21st year,	16 hrs. 48′	8th day added by leap year.
22nd year,	1 hr. 36′	
23rd year,	10 hrs. 24′	
24th year,	19 hrs. 12′	9th day added by leap year.
25th year,	4 hrs. 0′	
26th year,	12 hrs. 48′	
27th year,	21 hrs. 36′	10th day added by leap year.
28th year,	6 hrs. 24′	
29th year,	15 hrs. 12′	11th day added by leap year.
30th year,	*Nil.*	

We see that by observing the 8th, 19th and 27th years as leap years, a day is added by means of a leap year in order to avoid the error accumulating to more than *1 day* at the end of the following year.

Those that observe the 7th, 18th and 26th as leap years add a day by means of a leap year in order to avoid the error accumulating to more than *half a day* at the end of the following year. This in fact is what is done by both the schools at the end of the 15th year.

126. The months and the number of days in each are as follows :—

Month.	No. of days.	Day of Commencement reckoning from beginning of year.	Month.	No. of days.	Day of Commencement reckoning from beginning of year.
1. Muharram ...	30	...	7. Rajab ...	30	177
2. Safar ...	29	30	8. Shaban ...	29	207
3. Rabi-ul-awwal ...	30	59	9. Ramzan ...	30	236
4. Rabi-ul-akhir or Rabi-us-sani ...	29	89	10. Shawwal ...	29	266
			11. Zilkada ...	30	295
5. Jumadal-awwal ...	30	118	12. Zil-hijja ...	29	325
			Do. (when intercalary).	30	325
6. Jumadal-akhir or Jumad-us-sani ...	29	148			

All readers are familiar with the names of two of the Muhammadan months, *Muharam* and *Ramzan*, and all are equally familiar with the fact (due to the strictly lunar character of the year) that Muharram is liable to occur at any part of the solar year.

127. The Muhammadan day is reckoned from sunset to sunset, and the first day of Muharram is that on which the moon is for the first time visible at sunset after new moon. This is called the heliacal rising of the moon. Our readers are familiar with the Muhammadan usage of observing the heliacal rising of the moon from eminences of any sort, and passing word as soon as she is seen, so as to give notice that Muharram has commenced.

To the reader who is by this time quite at home among tithis and their ending moments, we would quote the following rule from Messrs. SEWELL & DIKSHIT's *Indian Calendar* :—

"It is well to note that where the first tithi of a month ends not less than 5 ghatikas before sunset, the heliacal rising of the moon will probably take place on the same evening ; but where the first tithi ends 5 ghatikas or more after sunset, the heliacal rising will probably not take place till the following evening. When the first tithi ends within these two periods between 5 ghatikas before and 5 ghatikas after sunset, the day of the heliacal rising can only be ascertained by elaborate calculations ".

Where so much depends upon sunset and moonrise, it is obivous that places with different longitudes and latitudes will often not agree in regard to the exact date of commencement of the Muhammadan year.

N.B.—Further directions for the use of our Table XV relating to the Muhammadan year are given as a concluding note to that table, *vide* Tables, p. 197.

Before commencing Part II of our work, which gives special hints with examples regarding the use of each of the more important tables, we take the opportunity to insert a note on Broken Periods :—

Note on Broken Periods.—It is very important that the reader, dealing with the Indian or any other calendar, should know thoroughly how to reckon broken periods. It is generally a question of addition or subtraction, but unless one goes through the process with reflection, there is always a danger of adding or subtracting 1 too much.

To take the simplest case, how many days are there from Friday in one week to Tuesday in the next ? Most people would use their fingers in such a case and answer '4' or '5' according as they began the reckoning with Friday or with Saturday. Now, such uncertainty is fatal to exact reckoning, and we should therefore follow certain rules whereby we may avoid all uncertainty.

First of all, we must always note the meaning of the question with reference to the *next sub-division of the broken period* : that is, in this case whether the meaning is from a particular hour on Friday to the same hour on Tuesday. This makes the meaning quite clear. From 6 a.m. on Friday to 6 a.m. on Tuesday following, there are 4 days: and the proper way to answer the question is to convert Friday and Tuesday into week-day figures 6 and 3, and to add a whole period (7) to 3 before deducting 6. Thus, 7+3=10. From 10 take 6, and we have the answer, 4 days. Some exercise is necessary in order to do even these simple week-day problems correctly.

The rule about *adding a whole period* when you have taken to reckon from a fraction of one period to a fraction of the next is very important. How many days are there from 23rd October in one year to 15th March in the next, the second being a leap year. If we refer to Table VIII we shall find that 23rd October is 296 days from 1st January, and 15th March (where we have had to pass 29th February) is 75 days. Add 365 to 75. Total 440. Deduct 296. Answer, 144 days.

If the 1st of a Tamil month be the 15th July, what will be the 7th of the Tamil month ? In such cases we must *make the same addition to or the same deduction from the one side as we make in regard to the other*. In the example before us, the addition to be made is 6, and the answer, 21st July.

If the 1st of a Tamil month be the 15th July, what will be the 29th of the Tamil month. We add 28 to each side. Therefore the answer is 15+28=43rd July, from which we deduct the whole of the completed period (July=) 31 days. Final answer, 43 *minus* 31=12th August.

PART II.—USE OF THE TABLES.

CHAPTER XIX.

USE OF EPHEMERIS OR TABLE XII (Solar Dates).

128. The main interest of the present work to the general Indian reader will lie in its enabling him to discover for himself the chief data given in Panchângams for any year between B.C. 1 and A.D. 2000. Panchângams in India are strictly confined to the year to which they relate, and the greatest difficulty is sometimes felt in verifying an Indian date only two or three years' old, while forecasting a date a year or two hence for the purpose of a marriage or any other future event is a matter of equal difficulty. By the use of the present work, future and past events can be dated according to the rigour of the Indian calendar and that with the greatest ease.

129. For the use of the general Indian reader, a special table called Table XII has been inserted in the present work, which gives solar dates, new moons and lunar and solar anomalies for the eighty years ending with A.D. 1919, *i.e.*, for 70 years before 1910 and 10 years after that date. Before instructing the reader how to look up dates in this special table, we shall give a few brief hints as to Indian time.

130. Indian time is kept in *ghatikas* (Tam. *naligais*) or sixtieth parts of a day, each *ghatika* being equivalent to 24 minutes of English time ($\frac{2}{5}$ of an hour), and in *palas* (Tam. *vinadis*) or sixtieth parts of a ghaṭika, each *pala* being equivalent to 24 seconds of English time. The *ghatikas* and *palas* are reckoned, not from midnight to midnight as in English time, but from sunrise to sunrise. Now, as the moment of sunrise depends on the latitude and longitude of each place, there should, strictly speaking, be as many *panchângams* as there are places in India. Indian astronomers get over this difficulty by calculating time in the first place according to one central latitude and longitude, and then applying the necessary corrections in order to deduce the time for other places. The central latitude is the Equator and the central longitude is that of Ujjain (75° 46′ 6″ East of Greenwich) where there was an ancient observatory. To combine the central latitude and the central longitude, they imagined an island called Lankâ in the Indian Ocean, situated on the equator and having the same longitude as Ujjain. This Lankâ is, of course, not Ceylon.

131. The standard time in the Indian calendar is therefore called Lankâ time, and 6 a.m. at Lankâ is the mean sunrise from which all times are, in the first instance, calculated. The time marked in Table XII is invariably Lankâ time, *i.e.*, time reckoned from 6 a.m. at Lankâ. The correction to be made at the present epoch (A.D. 1840 to A.D. 1920) in order to deduce the actual time from local sunrise at thirty of the most important places in India is given in seconds of time in the column " Total Correction " in Table XIII. In no calendar that we are aware of is the correction worked out for so many places in India in a shape ready for instant use.

132. We are now ready to use Table XII, and we will first learn how to look up solar dates in that table. Solar dates, *i.e.*, dates based solely on solar months, are in use in the Tamil and Malayalam tracts of Southern India (*i.e.*, in the Tamil Districts, in Malabar, in Travancore, and in Cochin) and in Bengal: elsewhere lunar dates are chiefly in use.

133. A solar date is thus cited:—

(Tamil) *Sâdhârana* varusham, Âni 15.

(Malayalam) *Kollam* 1086, Dhanus 20.

(Bengal) *San* 1316, Mâgha 28.

134. TAMIL. SOLAR DATES.—The year *Sâdhârana* is one of 60 years comprised in Jupiter's cycle. The revolutions of the cycle from A.D. 967 to A.D. 1926 are clearly indicated with corresponding English years in Table I. The reader will find that in the current cycle *Sâdhârana* is A.D 1910, and this fact is also indicated in Table XII under A.D. 1910.

135. Looking down the columns in Table XII under A.D. 1910, we find the following entries against *Ani*:—

3 Je. 14. 32 6 Jl. 15.

These abbreviated entries give us the following useful information:—

The month of *Ani* in A.D. 1910 begins on June 14, the day of the week being 3, *i.e.*, Tuesday.

The same month of Âni contains 32 days, the 32nd day being July 15, the corresponding day of the week being 6, *i.e.*, Friday.

Now, to deduce the 15th day of *Ani*, the first being given, is an easy matter: for we have only to add 14 to "3 June 14" and we get "17 June 28."

Now "17" for the day of the week is obviously 3, for we must cast out sevens, *i.e.*, whole weeks, when the figure indicating the day of the week exceeds 7.

We thus answer: "*Sâdhârana*, Âni 15" is Tuesday, 28 June, A.D. 1910.

136. Tamil years may also be quoted by *Kaliyuga* or *Saka* eras, and the years belonging to these eras are also indicated opposite the A.D. year in Table XII. We there see that A.D. 1910 corresponds to Kaliyuga 5011 and Saka 1832.

137. The reader should now note a peculiarity in the citation of Indian years, namely, that as a rule the years are "expired", not "current". To understand the difference between these expressions, we go back to the first year of Kaliyuga, which began on 18th February 3102 B.C. We are apt to call that the beginning of the first year: but Hindu reckoning prefers to call it the beginning of the year 0, and what it calls the year 1 is really what we should call the second year, *i.e.*, the "expired" year 1, and so the difference of 1 runs throughout the reckoning between "expired" (*gata*) and "current" (*vartlamâna*) years. In the present work, following the bulk of the authorities, all purely Indian eras (except the Kollam Ându) are expressed in expired years, and A.D. and Kollam years are alone expressed as current years. When the reader wants a "current" year for an Indian era (except Kollam), he should add 1 to the figure given in this work.

138. Malayalam Dates.—We have just stated that the Kollam or Malayâlam era reckons current not expired years: and we find from Table XII that Kollam Ându 1086, cited in our example, began in South Malabar in the month of Chingam (Tam. *Avani*) A.D. 1910 and in North Malabar in the next month Kanni (Tam. *Purattâsi*). To help the memory, we may recollect that "*Simha*" (the sign of the zodiac from which *Chingam* is derived) and "*South Malabar*" begin with "**S**.". In fact "**S–M**" may stand equally for "Singa**M**" and "**S**outh **M**alabar"; while both "**N**. Malabar" and "Ka**nn**i" contain a strong "**n**" (unlike the soft nasal *n* in Chingam.)

139. We find from Table XII that "Kollam 1086, Dhanus" begins on Thursday, 15 December 1910, and ends (the number of days in Dhanus being 30) on Friday, 13 January 1911. Now between 20 Dhanus and 30 Dhanus the difference is 10, and so we deduct 10 from 13 January 1911 and get 3 January 1911 as the equivalent of "Kollam 1086, Dhanus 20". To find the day of the week, we deduct 10 from 14 (next higher multiple of 7) *plus* 6, that is from 20, and we get 10, which is equivalent to 3 Tuesday.

Bengal Solar Dates.

140. Our specimen date is San 1316, Mâgha 28.

We find from Table XII, p. 151, that San 1316 (expired) is the Solar year corresponding to A.D. 1910–11; and from Table XII, p. 136, that the 1st of Solar Mâgha falls on Sunday, 15 Jan. 1911; while the 29th of Solar Mâgha (the last day of the month) is Sunday February 12. Obviously the 28th Mâgha is Saturday, February 11, A.D. 1911.

N.B.—Our Table XII treats the B. San years as *expired*. It will be seen, however, from Sec. **112** (6) that B. San years are usually cited as *current*. To convert the *expired* years in Table XII into *current*, add, as usual, 1.

141. The reader will note that each Bengal Solar month has the same name as the Lunar month commencing during that Solar month; whereas in the Tamil country each Solar month is named after the Lunar month which began *before* the Solar month in question. This is an important practical difference to be borne in mind in calculating Bengal and Tamil Solar dates. For instance Tamil *Kârtigai* is the next month to Bengal Solar Kârttika.

N.B.—All Solar months were originally named from the corresponding Lunar months; and each Lunar month was in turn named from the nakshatra in which the moon ordinarily is at Full Moon in that month. See Table XI.

Commencement of the Solar Month or Sankranti.

142. The astronomical commencement of a solar month is the moment of *Sankrânti*, i.e., the moment when the sun enters a sign of the Zodiac. To ascertain the moment of Sankrânti, we must add up two figures, namely, (1) the ghaṭikas and palas (and if we like the day of the English month) entered in Table XII against "Commencement of the Solar Year", and (2) the days, ghaṭikas and palas entered in the Eye-Table under the month of which we wish to know the Sankrânti or moment of commencement.

Thus, in the case of the three months which we selected as examples, the Sankrântis are as follows :—

	Arya Siddhanta.	*Surya Siddhanta.*
Commencement of Solar Year corresponding to A.D. 1910–11.	13 April 1910, 6 ghaṭ. 3 palas.	12 ghat. 13 palas.
Sankrânti or moment of commencement of Tamil *Ani.*	62 days 21 ghaṭ. 20 palas.	
Do. do. Malayâlam *Dhanus*	246 days 19 ghaṭ. 9 palas.	
Do. do. Bengal Solar *Mâgha*		275 days 38 ghat. 13 palas

Sankrânti of Tamil Âni, A.D. 1910 : 62 days 27 ghaṭ. 23 palas. ... ... (1)
or 75 days (counting from 1 April 1910): 27 ghaṭ. 23 palas ... (2)

Sankrânti of Mal. *Dhanus*, A.D. 1910 : 246 days 25 ghaṭ. 12 palas ... ... (3)
or 259 days (counting from 1 April 1910) : 25 ghaṭ. 12 palas ... (4)

Sankrânti of Beng. Solar *Mâgha* A.D. 1910–11 : 275 days 50 ghaṭ. 44 palas ... (5)
or 288 days (counting from 1 April) 50 ghaṭ. 44 palas. ... (6)

143. Results (2), (4) and (6) enable us to express the three Sankrântis in terms of the English Calendar : for by reference to Table VIII we find that—

(1) *Ani* Sankrânti, 75 days from 1 April 1910, is 14 June 1910, 27 g. 23 p.

(2) *Dhanus* Sankrânti, 259 days from 1 April 1910, is 15 Dec. 1910, 25 g. 12 p.

(3) *Mâgha* Sankrânti, 278 days from 1 April 1910, is 13 Jan. 1911, 50 g. 44 p.

These results agree with the commencement of Tamil *Ani* and Malayâlam *Dhanus* for 1910 as entered in Table XII, but the Sankrânti of Bengal Solar Mâgha, as above determined (13 January 1911), is not the commencement of that month as entered in Table XII, p. 136 (15 January 1911).

144. To account for this difference, we must observe that though the moment of a Solar Sankrânti is the same all over India for the same Siddhânta, the commencement of the corresponding month for *civil* purposes is not necessarily the same all over India. The following rules on the subject are adopted from Messrs. **Sewell & Dikshit's** " Indian Calendar".

(1) In Orissa the Solar month of the *Amli* and *Vilâyati* eras begins on the day of Sankrânti, at whatever moment of the day the latter may happen. Accordingly in Orissa, the three Solar months above named would begin on the Sankrânti days, *i.e.*, the 14th June 1910, the 15th December 1910 and 13th January 1911 respectively.

(2) In Bengal, when the fraction of the day at which the Sankrânti happens does not exceed 45 ghaṭikas, the Solar month begins on the next day : and when the Sankrânti occurs after 45 ghaṭikas, the Solar month begins on the next day but one. Accordingly the Bengal months corresponding to *Ani* A.D. 1910 (Bengal Solar *Ashâdha*) and to Malayâlam *Dhanus* A.D. 1910 (Bengal Solar *Pausha*) will commence on 15 June 1910 and 16 December 1910 respectively and not on 14 June and 15 December 1910 (the days of the Sankrânti), while Bengal Solar *Mâgha* A.D. 1910–11 will not commence till 15 January 1911 (*i.e.*, 2 days after the Sankrânti).

(3) In Southern India, in the Tamil country, when the fraction of the day at which the Sankrânti occurs does not exceed 30 ghaṭikas, the Solar month begins on the same day. That is why the beginning of Tamil *Ani* A.D. 1910 coincides with the day of the Sankrânti, 14 June 1910. When the Sankrânti occurs after 30 ghaṭikas, the Solar month begins on the

next day. This is why the Tamil month *Tai*, corresponding to Bengal Solar *Mâgha*, A.D. 1910–11 is shown in Table XII as having commenced on 14 January 1911, *i.e.*, the day after the Sankrânti.

145. The authors of the "Indian Calendar" also state that in Malabar, when the Sankrânti occurs after 18 ghaṭikas, the Solar month commences on the next day. If this were so, Malayâlam *Dhanus* in A.D. 1910–11 would commence on 16th December 1910. As a matter of fact, however, all the Malayâlam Panchângams show *Dhanus*, A.D. 1910–11, as commencing on the same day as the Tamil *Mârgali*, i.e., on 15 December 1910. This fact imports an element of doubt into the so-called "Malabar rule" laid down by Messrs. SEWELL & DIKSHIT; and till the contrary is shown to be the case, we must assume that the Tamil rule is followed in Malabar.

146. The Bengal rule laid down by the same authorities is practically applied in Table XII, page 136 (Ephemeris for Bengal). Whatever may be the rules as regards the commencement of a civil month *in any part of India*, the data given in Table XII and the Eye-Table will enable any one to apply his own *civil* rule with certainty. The dates entered in Table XII for the commencement and end of Solar months apply in strictness only to Southern India and to the *Arya Siddhânta*. For the *Sûrya Siddhânta* and for tracts where a different *civil* rule from that in force in Southern India is followed, suitable corrections may have to be applied, as in Table XII, page 136 (Ephemeris for Bengal).

147. To illustrate the difference between Sankrântis according to Ârya and Sûrya Siddhântas, we will give a practical example from a case which recently came under the author's notice. A person produced a Tamil horoscope which contained among other data the following note on the date of his birth :—

"A.D. 1856, June 28, *Ani* 16."

A reference to the Tamil panchângams of the year A.D. 1856 showed that according to *all* of them, 28 June 1856 A.D., corresponded to 17th, not to 16th *Ani*.

The apparent discrepancy was explained by the sole fact that the person, though now residing in Southern India, was born at *Belgaum* where the Sûrya Siddhânta is followed, and where presumably the horoscope was cast by a Tamil Astrologer.

The Solar year corresponding to A.D. 1856 commenced on 11 April A.D. 1856, at 14 ghaṭ. 6 palas according to Sûrya Siddhânta (Table X) and at 7 ghaṭ. 55 palas according to Ârya Siddhânta. (Table XII.)

For *Ani* Sankrânti by the Tables II and XIX, we have to add 62 days 21 ghaṭ. 20 palas according to Sûrya Siddhânta, and 62 days 19 ghaṭ. 34 palas according to Ârya Siddhânta.

∴ According to Sûrya Siddhânta, *Ani* Sankranti occurred on the 73rd day (reckoned from 1 April 1856) at 35 ghaṭ. 26 palas (*i.e.*, after 30 ghaṭ.)

According to Ârya Siddhânta, *Ani* Sankrânti occurred on the 73rd day (reckoned from 1 April 1856) at 27 ghaṭ. 29 palas (*i.e.*, before 30 ghaṭikas).

148. In accordance with the *civil* rules for Solar months current in the Tamil country (Sec. **144** *supra*) the month of *Ani* in A.D. 1856 began (according to Sûrya Siddhânta) on the 74th day reckoned from 1 April 1856, *i.e.*, on the 13th June 1856 (*vide* Table VIII), and the 16th *Ani* was 13 + 15 = 28th June 1856.

According to *Arya Siddhânta*, the month of *Ani* in A.D. 1856 began on the 73rd day reckoned from April 1856, *i.e.*, on 12th June 1856 (*vide* Tab. VIII) and the 17th of *Ani* was 12+16 = 28th June 1856.

149. This example shows that there could easily be a difference of 1 day between Solar dates in one part of the country and another.

It also shows that such differences cannot be accounted for by the ordinary *Jantris* and *Panchângams* but must be explained by recourse to the fundamental principles of the Indian Calendar.

CHAPTER XX.

USE OF EPHEMERIS OR TABLE XII for Lunar Tithis.

150. Even in those parts of the Indian Continent where the Solar Calendar is used for *civil* purposes, lunar tithis are observed for *religious* purposes: elsewhere the civil as well as the religious calendar is *lunar* and is regulated by tithis, instead of by days of the month.

151. Like the lunar calendar of the Jews, and unlike that of the Muhammadans, the Hindu calendar may be described as luni-solar since all its periods of time, though regulated by the movements of the moon, are made to fit in with divisions of the Solar Year. A lunar tithi is not counted at all unless the Sun rises upon it. A Tithi, Nakshatra, or Yoga may begin, or end, at any moment of the day, but the Tithi, Nakshatra, or Yoga pertaining to a day is that which is current *at sunrise.* A lunar month takes its name from the next following *Solar* Sankrânti : if there are two lunar months entitled to derive their name from a single Solar Sankrânti, they both receive the same name and one, the first, is called *adhika.* On the other hand, if a new moon is followed by two Sankrântis before it is followed by another new moon, the lunar month which would ordinarily have been derived from the second of the two Sankrântis is suppressed and is said to be *Kshaya*, that is, in defect. Lastly the lunar year, beginning in the month of *Solar* Chaitra, which is itself the last month of the *Solar* year, is named after the *next Solar Year.* These considerations suffice to prove that the Hindu lunar year is properly a luni-solar year.

152. Lunar periods of time are characterized by an element of certainty or rather of palpable evidence, not found in solar periods, and in another sense the actual moments of lunar phases are marked by much greater uncertainty than Solar Sankrântis. We will explain each of these propositions.

153. *Palpable evidence of lunar periods.*—We cannot visibly perceive in the heavens the fact that the sun has completed any definite stage in his annual course: but new moon, when the moon's longitude is the same as the sun's, is a patent fact: so are full moon and each quarter of the lunar month. There cannot be a difference of a whole day between the moment of new moon in one part of the country, and the same moment in another part, just as we saw there might be in the commencement of a solar month. If an inscription states that a certain tithi fell on a Monday, and by calculating backwards we trace the tithi to a Saturday we may be quite certain that there is some error in the inscription.

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154. On the other hand, there are greater fluctuations in the moon's than in the sun's movements, in the sense that the actual time of new moon may be as much as 14 hours before or 14 hours after the time of *mean* new moon. Two calculations are therefore necessary to determine the time at which the moon reaches any particular stage of her course: we must first ascertain the *mean* time, which is simply the expected time, taking an average over very long periods; and then we must calculate the *actual* time by making a correction to the mean time according to the moon's and sun's *anomaly* at the particular moment. Both these operations can be performed very easily and very accurately, that is to say, in exact accordance with the Siddhântas, by means of the tables in the present work. The correction is called a correction for the sun's and moon's *equation of the centre*. There are also one or two other minor corrections recognized in modern astronomy, but the Siddhântas do not make them. (See sections **121** to **127** *supra*.)

155. In the case of new moons from A.D. 1840 to A.D. 1920, it was thought best not to give the reader even the slight trouble of calculating the anomaly and the equation of the centre; and the exact moment of each new moon during these eighty years as well as the *exact* day of its occurrence, where it differs from the mean date, is entered in separate columns, in Table XII "General Ephemeris." Here, however, the day and fraction of a day marking the occurrence of *mean* new moon, and the sun's and moon's anomalies at the moment of mean new moon are also given, as they are necessary for the calculation of tithis between one new moon and another.

156. Supposing now the reader wishes to ascertain the exact time of new moon in July 1910. He finds the following entries:—

(Tab. XII) A.D. 1910.

Date and fraction of day of **Ashadha** new moon.	Actual moment of new moon.
(**5**) July 7, 10 ghaṭikas 57 palas;	July **6, 49 ghatikas 55 palas**.

Moon's and Sun's anomaly in days, ghatikas and palas.

Sun's anomaly: 84 days 58 ghaṭikas 29 palas.

Moon's anomaly: 4 days 29 ghaṭikas 13 palas.

157. As regards the *exact* moment of occurrence of new moon in July 1910, there is no difficulty at all; for it is Wednesday, 6th July 1910 (the **date** of mean moon as well as the *week-day* has to be diminished by one, by reason of the anomalies) and the time of day is **49 ghatikas 55 palas**.

158. This, as explained already, is mean Lankâ time. If now you wish to know the *true local time* of the *actual* moment of new moon in July 1910, and if you happen to be at one of the 30 places named in Table XIII, all you have to do is to apply to Lankâ time the correction indicated in the column "Total correction" for the day of the solar year entered under the new moon date in Table XII.

159. Supposing you are at Tanjore, the correction for the 84th day is + 2478 seconds of time, *i.e.*, 103 palas or + 1 ghaṭika 43 palas. Adding this to Lankâ time, 49 ghaṭikas 55 palas, we have **51** ghaṭikas **38** palas, exact time at Tanjore according to Sûrya Siddhânta. If now you wish to know how far this time agrees with modern astronomical computation, you have merely to look at the time of new moon according to the Tiruvâdi Almanac (Mr. Srauti's Panchângam) which is calculated from the English Nautical Almanac and is reduced to the latitude of Tanjore, and you find there "6th July 1910, **52** ghaṭikas **10** palas", showing a difference of 32 palas. This difference of 32 palas is due to lunar acceleration which has changed since the date of the Sûrya Siddhânta. (*Vide* Sec. **2**.)

160. If you are at Madras (lat. 13°) you will find the correction according to Table XIII to be + 2200 seconds of time, *i.e.*, + 92 palas or + 1 ghaṭika 32 palas. Adding this to mean Lankâ time, you get (49 ghat. 57 palas + 1 ghat. 32 palas =) 51 ghat. 29 palas. The time according to the "College" Panchângam (Mr. Raghavachari's) is 52 ghaṭikas 33 palas, showing a difference of 1 ghaṭika 4 palas. The increased difference, as compared with Mr. Srauti's Panchângam, is mainly due to two facts, (1) The correction for Madras local time is less than that for Tanjore local time by 11 palas, (2) Madras standard time, which is shown in the College Panchângam, is nine minutes or 22½ palas in advance of Madras Local time. There is still, however, an unexplained difference of a few palas between our tithi and that of the College Panchângam.

161. Next, suppose the reader wishes to know the ending moment of the 8th tithi or *ashtamî* in the bright fortnight following the new moon of 6th July 1910. For this we have to calculate first of all the ***mean*** ending moment of the 8th tithi, and then its ***actual*** ending moment. The mean ending moment is given by adding the collective duration of 8 tithis according to the Eye-table to the ***mean*** moment of new moon.

(Tab. XII) Mean moment of new moon	... A.D. 1910,	7 July 10 ghat. 57 palas.
Add collective duration of 8 tithis according to the Eye-table;	...	7 days 52 ghat. 29 palas.
	A.D. 1910	15 July 3 ghat. 26 palas.

162. This, then, is the ***mean*** ending moment of the 8th tithi or *ashtamî*. For the *actual* ending moment of the same tithi, we first of all add the collective duration of 8 tithis to the moon's and sun's anomaly noted in Table XII under the new moon of 7 July 1910.

		Moon's anomaly			Sun's anomaly	
	4 days	29 ghat.	13 palas	84 days	58 ghat.	29 palas.
Add collective duration of 8 tithis.	7 days	52 ghat.	29 palas	7 days	52 ghat.	29 palas.
	12 days	21 ghat.	42 palas	92 days	50 ghat.	58 palas.
Deduct ☉'s Eqn.		–2 ghat.	20 palas			
Net ☾'s anom.	12 days	19 ghat.	22 palas			

163. According to the Eye-table we find the Sun's Equation for an anomaly of 92 days, 51 ghat. to be *minus* 2 ghat. 20 palas, and we deduct this equation from the moon's anomaly already found. The Equation of the centre for the moon's net anomaly of 12 days 19 ghat. 22 palas is, by the Eye-table, *minus* 9 ghaṭikas.

164. The sum of moon's and sun's Equations :

– 2 ghat.	20 palas.
– 9 ghat.	
– 11 ghat.	20 palas.

165. If 11 ghaṭikas be deducted from the mean ending moment of the 8th tithi, we obtain, as the *actual* ending moment of *sukla ashtamî*, 14 July A.D. 1910, 52 ghaṭikas after sunrise.

166. This is Lankâ time. If now we wish to know the ending moment of the tithi in true local time, say at Madras (Lat. 13°), all we have to do is to apply the figure entered in the column " Total correction " under Madras (Lat. 13°) against the 92nd day of the Solar Year in Tab. XIII. The correction being + 2095 seconds or + 87 palas, that is + 1 ghat. 27 palas, the ending moment of **Sukla ashtami**, 14 July 1910, at Madras, is (52 ghat. + 1 ghat. 27palas =) 53 ghat. 27 palas. The "College" Panchângam gives 52 ghat. 33 palas.

167. We will now show the reader how to calculate successive tithis from the Eye-table and Table XII combined. The duration of 1 tithi, according to the Eye-table, is 59 ghaṭikas 4 palas, that is, 1 day less 1 ghaṭika *plus* 4 palas. Bearing this in mind, we shall proceed to calculate the successive tithis after new moon, 7 July 1910 ; the mean time of which is 10 ghat. 57 palas, or nearly 11 ghaṭikas.

Details for determining the ending moments (in Madras Time) of 30 tithis, Lunar Ashadha, A.D. 1910.

A.D. 1910 Tithi	July.	Mean ending moment of tithi.	☉'s Anom.	☉'s Equation.	☾'s Anom. at mean end of tithi.		Add or subtract ☉'s Equation.		☾'s Equation.	Sum of ☉'s & ☾'s Equations.	Actual end of tithi, Lanka time.		Correction for Madras time.	Ending moment of tithi, Madras time.		Ending moment, "College" Panchangam.		Ending moment Kanjanur Panchangam		Difference between Surya Siddhanta and Naut. almanac.	Full name of tithi.
		gh. p.	d. gh.	gh. p.	d.	gh. p.	d.	gh. p.	gh. p.	gh. p.	July	gh.p.	gh. p.	July	gh.p.	July	gh. p.	July	gh. p.	gh.p.	
Amavasya *Sukla paksha.*	7	10,57	84,58	−0, 50	4	29,13	4	28,23	−20,12	−21,2	6	49,55	+1,31	6	51,26	6	52,33	6	53,11	−1,7	
																					Sukla Paksha.
1	8	10, 1	85,57	−1, 0	5	28,17	5	27,17	−22,48	−23,48	7	46,13	+1,31	7	47,44	7	47, 7	7	49,41	+0,37	Pratipada.
2	9	9, 5	86,56	−1,12	6	27,21	6	26, 9	−24,23	−25,35	8	43,20	+1,30	8	45, 0	8	42,52	8	47,16	+2, 8	Dvitiya.
3	10	8, 9	87,55	−1,23	7	26,25	7	25, 2	−24,47	−26,10	9	41,59	+1,29	9	43,28	9	40,10	9	45,58	+3,18	Tritiya.
4	11	7,13	88,54	−1,34	8	25,29	8	24,55	−23,59	−25,33	10	41,40	+1,29	10	43, 9	10	39,13	10	45,55	+3,56	Chaturthi.
5	12	6,17	89,53	−1,45	9	24,33	9	22,48	−21,55	−23,40	11	42,37	+1,28	11	44, 5	11	40,10	11	47, 7	+3,55	Panchami.
6	13	5,21	90,52	−1,56	10	23,37	10	21,41	−18,36	−20,32	12	44,49	+1,27	12	46,16	12	43, 1	12	46,36	+3,15	Shashti.
7	14	4,25	91,51	−2, 7	11	22,41	11	20,34	−14,11	−16,18	13	48, 7	+1,27	13	49,34	13	47,25	13	52,56	+2, 9	Saptami.
8	15	3,29	92,50	−2,17	12	21,45	12	19,28	− 8,52	−11, 9	14	52,20	+1,26	14	53,46	14	52,59	14	57,23	+0,47	Ashtami.
9	16	2,33	93,49	−2,28	13	20,49	13	18,21	− 2,58	− 5,26	15	57, 7	+1,26	15	58,33	15	59,12	15	60, 0	−0,39	Navami.
																	Navami	16	2,16		
10	17	1,37	94,48	−2,39	14	19,53	14	17,14	+ 3,11	+ 0,32	16	60, 0		16	60, 0	16	60, 0				Dasami
										Dasami	17	2, 9	+1,25	17	3,34	17	5,22	17	7,11	−1,48	Dasami.
11	18	0,41	95,47	−2,50	15	18,57	15	16, 7	+ 9, 4	+ 6,14	18	6,55	+1,24	18	8,19	18	10,56	18	11,46	−2,37	Ekadasi.
12	18	59,45	96,46	−3, 0	16	18, 1	16	15, 1	+14,22	+11,22	19	11, 7	+1,24	19	12,31	19	15,24	19	15,44	−2,53	Dvadasi.
13	19	58,49	97,45	−3,11	17	17, 5	17	13,54	+18,45	+15,34	20	14,23	+1,23	20	15,46	20	18,35	20	18,44	−2,49	Trayodasi.
14	20	57,53	98,44	−3,21	18	16, 9	18	12,48	+22, 1	+18,40	21	16,33	+1,23	21	17,56	21	20,10	21	20,34	−2,14	Chaturdasi.
15	21	56,57	99,43	−3,32	19	15,13	19	11,41	+24, 4	+20,32	22	17,29	+1,22	22	18,51	22	20,24	22	21,31	−1,33	Paurnami.
Krishna Paksha																					*Krishna Paksha*
1	22	56, 1	100,42	−3,42	20	14,17	20	10,35	+24,48	+21, 6	23	17, 7	+1,22	23	18,29	23	17,10	23	20,34	+1,19	Pratipada.
2	23	55, 5	101,41	−3,52	21	13,21	21	9,29	+24,21	+20,29	24	15,34	+1,21	24	16,55	24	16.53	24	18,43	+0, 2	Dvitiya.
3	24	54, 9	102,40	−4, 2	22	12,25	22	8,23	+22,43	+18,41	25	12,50	+1.21	25	14,11	25	13,41	25	15,46	+0,30	Tritiya.
4	25	53,13	103,39	−4,12	23	11,22	23	7,17	+20, 4	+15,52	26	9, 5	+1,20	26	10,25	26	9,44	26	11,49	+0,41	Chaturthi.
5	26	52,17	104,38	−4,22	24	10,33	24	6,11	+16,34	+12,12	27	4,29	+1,20	27	5,49	27	5,18	27	7,11	+0,31	Panchami.
6	27	51,21	105,37	−4,32	25	9,37	25	5, 5	+12,23	+ 7,51	...	59,12	+1,19	28	0,31	28	0,29	28	1,47	+0, 2	Shashti.
7	28	50,25	106,36	−4,42	26	8,41	26	3,59	+ 7,40	+ 2,58	28	53,23	+1,19	...	54,42	...	55,22	...	54, 8	−0,40	Saptami.
8	29	49,29	107,35	−4,52	27	7,45	27	2,53	+ 2,40	− 2,12	29	47,17	+1,19	29	48,36	29	50, 5	29	49,48	−1,29	Ashtami.
9	30	48,33	108,34	−5, 2	0	33,32	0	28,30	− 2,29	− 7,31	30	41, 2	+1,18	30	42,20	30	44,37	30	43,44	−2,17	Navami.
10	31	47,37	109,33	−5,11	1	32,36	1	27,25	− 7,31	−12,42	31	34,55	+1,18	31	36,13	31	39, 6	31	37,49	−2,53	Dasami.
	Aug.										Aug.			Aug		Aug.		Aug.			
11	1	46,41	110,32	−5,21	2	31,40	2	26,19	−12,14	−17,35	1	29, 6	+1,18	1	30,34	1	33,34	1	32,10	−3,10	Ekadasi.
12	2	45,45	111,31	−5,30	3	30,44	3	25,14	−16,27	−21,57	2	22,48	+1,17	2	25, 5	2	28,11	2	27, 3	−3, 6	Dvadasi.
13	3	44,49	112,30	−5,39	4	29,48	4	24, 9	−19,58	−25,37	3	19,12	+1,17	3	20,29	3	23,14	3	22,38	−2,45	Trayodasi.
14	4	43,53	113,29	−5,49	5	28,52	5	23, 3	−22,39	−28,28	4	15,25	+1,17	4	16,42	4	18,57	4	19, 4	−2,15	Chaturdasi.
15 *Amavasya*	5	42,57	114,28	−5,58	6	27,56	6	22, 2	−24,19	−30,17	5	12,40	+1,16	5	13,56	5	15,24	5	16,33	−1,28	Amavasya.

168. The reader is presented in the above table with a full decursus of tithis for a whole lunar month, calculated in accordance with the Sûrya Siddhânta; and he is also furnished in the same table with the ending moments of the same tithis, as arrived at by two standard Panchângams current in Southern India, namely, (1) the Kanjanûr Panchângam of Annâvaiyangâr, commonly called "No. 28 Panchângam", and (2) the Nungambaukum Panchângam by Mr. Râghavachâri and his son, commonly called "The College Panchângam." The former of these panchângams is typical of the class known as "Vâkya Panchângams".

169. A *vâkyam* (meaning in Tamil a sentence) is simply a phrase or series of phrases, employed in accordance with a very ancient "Transnumeration" table, called "Kadapayadi", closely analogous to the present writer's Transnumeration Table, published at page 37 of his "Secret of Memory". It is generally believed that the vâkya process is based on the Ârya Siddhânta, but this is by no means well established.

Only solar dates in Southern India seem to follow the Ârya Siddhânta, but for lunar tithis and nakshatras, that Siddhânta, as proved by the above, as well as by the next, table, seems to have been given up long ago, even in Southern India, in favour of the more accurate Sûrya Siddhânta. If the Kanjanûr Panchângam had followed the Ârya Siddhânta, all mean tithis, including *Amâvâsyâs*, would have occurred according to that Panchângam 3 ghaṭikas 42 palas later than by the Sûrya Siddhânta, whereas the above table, and more especially the next table of nakshatras, shows a much smaller difference as a rule between that panchângam and the results arrived at on strict Sûrya Siddhânta principles.

170. The Nungumbaukum or "College" Panchângam belongs to the class of what are called in Southern India *Drig-ganita* panchângams, *i.e.*, those in which computation is checked by observation, the observation being understood to be that carried on at a modern standard observatory, like those at Greenwich, Paris and New York.

171. Practically, all the *Drig-ganita* panchângams are based on the Greenwich Nautical Almanac, which is published some three years in advance for each year. It is not to be supposed that the moon's and sun's places given in the Nautical Almanac are those observed then and there, for they are also calculated on the best available data, which include several elements of the lunar theory, neglected in the Siddhântas.

N.B.—For the manner in which Drig-ganita tithis are computed, see Section **121** *Supra*.

172. The reader will observe that in our specimen table the difference between Sûrya Siddhânta tithis and what we may call Nautical Almanac tithis, does not exceed 2 ghaṭikas at new moon or 4 ghaṭikas at other times. (The extreme difference between the two systems may amount at times to as much as 17 ghaṭikas, or 7 hours.) This no doubt is a disadvantage of the Sûrya Siddhânta system for strictly astronomical purposes (*i.e.*, on the assumption that Hindu Astronomy *must* agree with the most accurate results of European Astronomy); but if it is remembered that a Nautical Almanac panchângam cannot be constructed unless one has in hand the Nautical Almanac of the particular year, whereas a Siddhânta panchângam can be constructed in a few hours' time for any year, past, present or future, without any other materials than those furnished by Tables VI, VII, VIII and IX of this work, it will be seen that a panchângam on the purely Indian system is a great convenience.

Moreover, the Indian panchângam is not a thing of to-day or yesterday, but has been constructed on the lines now followed for at least 1500 years, and no person, unacquainted with the system, can hope to understand the thousands of inscriptions scattered all over India, on the proper reading of which the reconstruction of scientific Indian history largely depends.

173. *Adhika* or *Trisparsa* Tithis and *Kshaya* Tithis: A tithi which begins on one day, is current for the whole of the next day and ends in the morning of the third day is called an *Adhika* or *Trisparsa* tithi. *Trisparsa* means "touching three days." An example is furnished in the above table by *sukla navami* of the Kanjanûr Panchângam, and *sukla dasamî* of our own and the College Panchângam. The fact that a tithi is current for the whole of a day is indicated in the panchângams by entering '60 ghat' as its ending moment, *i.e.*, it does not come to an end all that day. On the other hand, a tithi which begins and ends *between* one sunrise and another is *kshaya* or in defect and is suppressed. Such a tithi is *krishna saptamî* by all three Panchângams in the above table.

N.B.—If the reader wishes to apply to the Siddhanta results, the corrections necessary to bring them up to the Nautical Almanac standard, he is enabled to do so in Chapter XVII of Part I of this work, Sections **116** to **122**.

CHAPTER XXI.

Use of Tables XII and XI—A.

(NAKSHATRAS.)

174. We next suppose the reader to be desirous of calculating the *nakshatras* in order for a particular lunar month. The longest interval between each mean new moon and the mean ending moment of each of the 27 nakshatras following new moon is given in Table XI-A (pp. 134, 135) in days, ghaṭikas and palas. The interval is subject to a single correction which holds good for the whole of a Solar Year. For the years A.D. 1840 to A.D. 1920 the corrections for Nakshatras are shown in the last column of Table XII "Deduct for Nakshatras". The deduction for the solar year A.D. 1910-11 is 1 day 56 ghaṭikas 18 palas. Taking, for example, Lunar Âshâḍha in this year, we find at p. 134 that the first Nakshatra for Âshâḍha from which the deduction can be made is No. 7 Punarvasu, and we proceed to determine the mean ending moment of Punarvasu Nakshatra.

		d.	gh.	p.
(Table XI-A, p. 134.)	Interval for Punarvasu, No. 7 Nak. in "Âshâḍha"	2	49	41
(Table XII, p. 151.)	*Deduct* for the year 1910-11	—1	56	18
		0	53	23
	Add mean ending moment of Âshâḍha New moon. (Table XII, p.151.) July	7	10	57
	Mean ending moment of No. 7 Punarvasu Nakshatra July	8	4	20

175. Starting from this point, the following Table illustrates the whole of the processes for determining the ending moment of every nakshatra in the series of 27 from 6th July to 2nd August A.D. 1910. As in the last table, a comparison is also instituted between the ending moments of nakshatras, recorded in the "No. 28" and "College" Panchângams respectively, and those arrived at in the present table on the principles of Sûrya Siddhânta. The reader will note that the agreement among the different panchângams is, in this particular month, closer in regard to nakshatras than in regard to tithis. However, an extreme variation of 5 ghaṭikas has to be looked for even under nakshatras between Sûrya Siddhânta and Nautical Almanac results.

Table showing mean and actual ending moment (Lanka time and Madras local time) for each Nakshatra from 6th July 1910 to 2nd August 1910.

Name of Nakshatra.	English month and day.	Mean ending moment of Nakshatra.	Moon's mean anomaly.	Nakshatra equation (Tab. IX-I).	Actual ending moment of Nakshatra, Lanka time.	Correction for Madras (Tab. XIII).	Actual ending moment of Nakshatra, Madras time.	Kanjanur No. 28 Panchangam.	College Panchangam.	Surya Siddhanta compared with Nautical Almanac.
A.D. 1910	M. d.	gh. p.	d. gh. p.	gh. p.	M. d. gh. p.	gh. p.	M d. gh. p.	gh. p.	gh. p	gh. p.
Punarvasu ...	July 8	4 20	5 12 25	−20 35	July 7 43 45	+1 30	July 7 45 15	46 0	42 50	+2 25
Pushya	July 9	5 3	6 13 8	−22 20	July 8 42 43	+1 30	July 8 44 13	45 23	40 27	+3 46
Aslesha	July 10	5 46	7 13 51	−22 59	July 9 42 47	+1 29	July 9 44 16	45 54	39 36	+4 40
Magha	July 11	6 29	8 14 34	−22 23	July 10 44 6	+1 29	July 10 45 35	47 38	40 28	+5 7
Purva Phalguni ...	July 12	7 12	9 15 17	−20 35	July 11 46 37	+1 28	July 11 48 5	50 36	43 13	+4 52
Uttara Phalguni ..	July 13	7 55	10 16 0	−17 33	July 12 50 22	+1 28	July 12 51 50	54 47	47 47	+4 3
Hasta	July 14	8 28	11 16 43	−13 25	July 13 55 3	+1 27	July 13 56 30	52 57	53 48	+2 42
Chitra	July 15	9 11	12 17 26	− 8 22	July 15 0 49	+1 26	July*15 2 15	5 56	0 56	+1 19
Svati	July 16	9 54	13 18 9	− 2 45	July 16 7 9	+1 25	July 16 8 34	12 16	8 33	+0 1
Visakha	July 17	10 37	14 18 52	+ 3 5	July 17 13 42	+1 25	July 17 15 7	18 40	16 9	−1 2
Anuradha ...	July 18	11 20	15 19 35	+ 8 42	July 18 20 2	+1 24	July 18 21 26	24 41	23 1	−1 35
Jyeshtha ...	July 19	12 3	16 20 18	+13 42	July 19 25 45	+1 23	July 19 27 8	30 3	28 53	−1 45
Mula	July 20	12 46	17 21 1	+17 47	July 20 30 33	+1 23	July 20 31 56	34 26	33 15	−1 19
Purva Ashada ...	July 21	13 29	18 21 44	+20 45	July 21 34 14	+1 22	July 21 35 36	37 17	36 11	−0 35
Uttara Ashada ...	July 22	14 12	19 22 27	+22 29	July 22 36 41	+1 21	July 22 38 2	39 43	37 42	+0 20
Sravana	July 23	14 55	20 23 10	+22 58	July 23 37 53	+1 21	July 23 39 14	40 29	37 59	+1 15
Sravishta ...	July 24	15 38	21 23 53	+22 15	July 24 37 53	+1 20	July 24 39 13	40 5	37 13	+2 0
Satabhisaj ...	July 25	16 21	22 24 36	+20 26	July 25 36 47	+1 20	July 25 38 7	38 47	35 38	+2 29
Purva Bhadrapada ...	July 26	17 4	23 25 19	+17 39	July 26 34 43	+1 20	July 26 36 3	36 15	33 25	+2 38
Uttara Bhadrapada ...	July 27	17 47	24 26 2	+14 5	July 27 31 52	+1 19	July 27 33 11	33 16	30 44	+2 27
Revati	July 28	18 30	25 26 45	+ 9 54	July 28 28 24	+1 19	July 28 29 43	29 34	27 45	+1 58
Asvini	July 29	19 13	26 27 28	+ 5 14	July 29 24 27	+1 19	July 29 25 46	25 35	24 27	+1 19
Bharani	July 30	19 56	27 28 11	+ 0 25	July 30 20 21	+1 18	July 30 21 39	21 32	21 0	+0 39
Krittika	July 31	20 39	0 45 37	− 3 40	July 31 16 59	+1 18	July 31 18 17	17 30	17 29	+0 48
Rohini	Aug. 1	21 22	1 56 20	− 9 9	Aug. 1 12 13	+1 18	Aug. 1 13 31	13 43	13 55	−0 24
Mrigasira ...	Aug. 2	22 5	2 57 3	−13 24	Aug. 2 8 41	+1 17	Aug. 2 9 58	10 20	10 27	−0 29
Ardra	Aug. 3	22 48	3 57 46	−17 8	Aug. 3 5 40	+1 17	Aug. 3 6 57	7 36	7 19	−0 22

CHAPTER XXII.

USE OF TABLE X.

176. Table X, which covers more than a hundred and thirty pages of the present work is intended to serve the epigraphist and the historian in somewhat the same manner as Table XII is intended to serve the general reader. If Table X is used in conjunction with the Eye-Table, nothing else is needed for the determination of the ending moments of tithis, correct to two places of decimals of a day, for any of the 2000 years between B.C. 1 and A.D. 2000. The manner of using Table X will be obvious to the reader who knows how to use Table XII.

* *Chitra* Nakshatra extends from 56 gh. 30 p. on 13th July 1910 to 2 gh. 15 p. on 15th July 1910. No *Nakshatra* comes to an end on 14th July 1910, and this fact is indicated in the panchangas by entering *Chitra* as adhika Nakshatra and showing it against *July 14, 60 gh. no palas* as well as against July 15th, 2 gh. 15 p. The first entry means simply that on 14th July 1910, *Chitra* was current for the whole of the civil day.

177. Suppose for example that the date corresponding to "*Saka Samvat 999, Phâlguna Sukla 3*", is to be ascertained, we proceed as follows :—

Ṡaka 999 expired

This is how the two head-lines of Table X should be used for ascertaining ⊙'s and ☾'s anomalies.

	Days of S. Year.	☾'s Anom.	
First New Moon in Solar Year ...	3·28	2·67	
Add collective days up to Phalguna New Moon, and remember there was an adhika month earlier in the year.	324·84	21·74	
Collective duration of 3 tithis (by Eye-Table)	2·95	2·95	
	331·07	27·36	+·165 (⊙'s Eqn.)=27·53
Sun's Eqn. (by Eye-Table) for	331·07 days=		+·165 day
Moon's do. do. for	27·53 days=		+·002 day

	Sum of ⊙'s and ☾'s Equations.		+·167 day
(Table X)	Phalguna New Moon, Saka 999, A.D. 1078	(4) Feb.	14·78 } **Mean tithi.**
(Eye-Table)	Duration of 3 tithis	(2)	2·95 }
	Add mean tithi to sum of ⊙'s and ☾'s Eqn.	(7)*	Feb. 17·90

The ending moment of the tithi is therefore ·90 of a day, *i.e.*, (according to Eye-Table 54 ghat. on Saturday, 17 February A.D. 1078; which, so far as ghaṭikas are concerned, is the result arrived at by Dr. Fleet by applying Prof. Chhatre's table—*Ind. Antiq.*, Vol. XVII, p. 162.

178. In the above process the *mean ending moment* of the tithi is given in the *two* lines bracketed "**Mean tithi**", and *all the rest* of the process is directed to ascertaining the sum of the sun's and moon's equations of the centre.

179. A further simplification could have been effected by using Table VIII for ascertaining the sun's and moon's anomaly, thus :—

	⊙'s An. days.	☾'s An. days.
(Table X) Ṡaka 999 expired. Anomaly of sun and moon at first new moon in Solar Year	3·28	2·67
(Table VIII) Phâlguna ṡukla 3, increased by 1 month (see Sec. **220** *infra*) because of an adhika month in the year : i.e., *Chaitra sukla* 3.	327·79	24·69
	331·07	27·36
	⊙'s Eqn.	+ ·165
		27·53

We thus obtain the sun's and moon's anomalies by the additionof *two*, instead of *three*, set of figures, and we may proceed as before to determine the equations for these anomalies.

Solar Dates by Table X.

180. Supposing the Kumbha Sankrânti for the same Ṡaka Samvat 999, expired, was wanted : we proceed as follows :—

Commencement of solar year, Ṡaka 999 :	Mr. 23·6638
Kumbha Sankrânti (by Eye-Table)	305·0850
	Mr. 328·7488, *i.e.*, 44 ghat. 56 p. (Tab. XIX.)

* Since the sum of the several fractions of a day which go to make up the ending moment of the tithi exceeds unity, we increase the week-day by 1.

Now, by Table VIII (see Sec. **216** *infra*) 328 days from Mr. 1, A.D. 1077 is **22 Ja. 1078**.

By Table IV (see Sec. **231** to **241** *infra*) the week day of 22 Ja. 1078 was 3 + 6 + 6 + 22 = 37, which divided by 7 leaves remainder 2, *i.e.*, **Monday**. This result agrees with that arrived at by Dr. Fleet *loc. cit.* except as regards the moment of Sankrânti, which he puts down as about 47 ghat. 52 palas.

181. To take another example, suppose we want the third Panguni of the Viśvâvasu year which was current in or after the Śaka year 1347 (expired.)

By Table X, Śaka 1347 (exp.) was A.D. 1425.

By Table I, the Viśvâvasu of that epoch was A.D. 1425.

By Table X, the commencement of Śaka 1347 (exp.) was Mr. 26·7111

By the Eye-Table, the addition for the commencement of Panguni = 334·9053

361·6164 days.

By Table VIII, 361 days from 1 Mr. A.D. 1425 was 24th Feb. A.D. 1426.

Now, since ·6164 of a day exceeds ·5, that is, goes beyond sunset, therefore, by the rule in force in South India, [*vide* Sec. **144** (3)] the first Panguni in the year in question was 25th Feb. 1426.

Therefore the 3rd Panguni (Śaka 1347, Viśvâvasu) was 27th Feb. 1426.

And by Table IV the week day of 27th Feb. 1426 was 6 + 4 + 2 + 27 = 39 ,which, divided by 7, leaves remainder 4 (i.e.) *Wednesday*. This agrees with the result arrived at by Professor Kielhorn at page 83 of Appendix to Vol. VII, *Epigraphia Indica*.

Nakshatras concurrent with Tithis.

182. A tithi is often cited along with a Nakshatra ending on the same day. In such cases the *ending moment* of the Nakshatra can be most easily determined by Table XI. (For merely finding the *concurrent* Nakshatra, we may proceed much more expeditiously as in Section **185** or Section **186**.)

Thus in the case dealt with in sections **177** to **179**, the Nakshatra correction for Śaka 999 (A.D.1077) was (Tab. XI) that corresponding to argument 3·279, *i.e.*, ·2394 + ·0059 = ·2453. Deducting this from the interval for Revatî in the 12th lunar month (the year 999 Śaka contained an adhika month, and therefore Phâlguna was the 12th month), we have, as net interval for Revatî, 3·1860 *minus* ·2453 = 2·9407. Add this to New moon, Feb. 14·78 we have Feb. 17·72. ☾'s Anom. 2·67 + 21·74 + 2·94 = 27·35. Eqn. for Nak. (Tab. IX-*k*) = + ·016. Absolute ending moment of Nakshatra, Feb. 17·72 + ·016 or Feb. 17·74, *i.e.*, 44 ghaṭikas after sunrise on 17 Feb. A.D. 1078. This agrees with Mr. Dikshit's calculation, cited by Dr. Fleet at p. 162 of *Ind. Ant.*, Vol. XVII.

183. In South Indian inscriptions a solar date, a lunar tithi and the corresponding *nakshatra* are often cited together.

The following example shows how the citation should be verified.

Ep. Indica, Supplt. to Vol. VII, p. 132.

"Śaka 1106: on the day of Satabhîshaj, which was the 14th *tithi* of the first fortnight and a Wednesday, the 26th solar day of the month of Simha".

Now by Table X, Saka 1106 commenced on March 24·3508, A.D. 1184.

By Eye-Table, Simha begins and Karkata ends 125·4755 days after commencement of solar year.

∴ Simha Sankrânti of Śaka 1106 was on 149·8263 days of the solar year.

That is, by the rule in Southern India already adverted to, the 1st day of Simha was the 150th day reckoned from 1st March 1184.

∴ the 26th day of Simha would be 150 + 25 or the 175th day from 1st March which by Table VIII, was 22 August.

In order that the 26th day might be the 14th tithi of the first fortnight, the new moon must have occurred 13 days before, *i.e.*, about 9 August.

In Table X we find Bhâdrapada new moon on Aug. 8·56 of A.D. 1184 (Wednesday).

By Eye-Table, 14 tithis = 13·78 days.

∴ the mean 14th tithi ended on August 22·34, A.D. 1184.

The day of the week was Wednesday: since the new moon was on Wednesday, the addition of 14 days or 2 whole weeks to the day of the week would still give us the same day, Wednesday.

184. If we want the actual ending moment of the 14th tithi, we proceed as follows :—

		☾'s Anom.
First new moon in solar year, A.D. 1184	19·0909	1·191 days.
By Table VIII, 14th tithi of Śukla Bhâdrapada	131·9033	21·685
	150·9942	22·876
By Tab. IX, ⊙'s Eqn. for 150·99 days = —·1672		—·1672
" " ☾'s Eqn. for 22·709 days = + ·3550		22·709
Sum = + ·1878	+ ·1878	
	151·1820	
Add commencement of solar year, Mr.	24·3508	
	175·5328 days from 1st Mr. A.D. 1184.	

By Table XIX ·5328 day = 31 ghaṭikas 58 palas.

The actual ending moment of Bhâdrapada śukla 14, Saka 1106, was 31 ghat. 58 palas after mean sunrise on Wednesday, 22 Aug., A.D. 1184.

185. For the Nakshatra corresponding to this tithi we proceed as follows :—

	Lunation space.
By Table VIII (last column) Sun's longitude for Nak. on 151st day =	12·0321
" V (last column) do. do. ·18 day =	·0145
Add 14 tithis (by Table II)	13·7809
	25·8275

By Table III, the lunation space last arrived at, 25·8275 corresponds to No. 24 Satabhishaj whose ending space is 26·2494

Our inscription is therefore correct in all respects.

186. An equally simple method of ascertaining the Nakshatra concurrent with the above tithi is the following, where, however, we use degrees of sun's and moon's longitude.

Ending moment of tithi in days of solar year was 150·99 + ·19 (Sum of eqns.) = 151·18 days.
By Tab. XVII-A & XVII-C., ⊙'s Long. and Eqn. for 151·18 days = 146·69° − 2·04° + ·18 = 144·83°
Add Moon's Elongation, *i.e.*, No. of tithi × 12° = 14 × 12° = 168·00°

312·83°

By Eye-Table the longitude is that of Nakshatra *Satabhishaj.*

CHAPTER XXIII.

THEORY OF ANOMALIES AND EQUATIONS OF THE CENTRE.

CONSTRUCTION OF TABLE IX.

187. The uses of Table IX, to which we come after discussing Tables XI and X, will be sufficiently obvious from examples already worked out. We therefore give in this place in popular language a theory of anomalies and their equations.

188. From the fact that the orbit of the moon as well as that of the earth is elliptical, not circular, it follows that the motions of these bodies cannot be uniform from day to day or from hour to hour. This irregularity is called the *eccentricity* of the orbit and the correction to be applied on this account is called the equation of the centre.

189. The following extract from Prof. Jacobi's Table in Vol. I of *Epigraphia Indica* will serve to introduce the reader to the general theory of Solar and Lunar anomalies, and it will also show how the material furnished by the Siddhântas has been worked into Table IX of the present work :—

Surya Siddhanta.

☾'s Eqn. +; ⊙'s Eqn. −				☾'s Eqn. −; ⊙'s Eqn. +				Moon's Equation of the centre.			Sun's Eqn. of the centre.		
Deg.	Min.	Deg.	Min.	Deg.	Min.	Deg.	Min.	Deg.	Min.	Sec.	Deg.	Min.	Sec.
0	0	180	0	180	0	360	0	0	0	0	0	0	0
30	0	150	0	210	0	330	0	2	32	0	1	6	3
60	0	120	0	240	0	300	0	4	22	30	1	53	26
90	0	90	0	270	0	270	0	5	2	46	2	10	31

190. Let us try to interpret in detail the meaning of this table. We are supposed to measure the moon's rate of progress, beginning from perigee, the point when she is nearest the earth, and at every step we must distinguish the moon's mean position, *i.e.*, the position which she would have attained at a uniform rate of motion equal to the mean, and the actual position which she attains on account of the eccentricity of her orbit.

191. The mean and actual positions are the same at 0° or 360°, *i.e.*, at perigee and at 180°, *i.e.*, at apogee.

When the moon's mean position is 30° from perigee, her actual position has advanced by 2 degrees 32 minutes.

When her mean position ought to be 60°, we find her actually at 64° 22′ 30″ from perigee.

When her mean position ought to be 90°, that is half way between perigee and apogee, she is actually 95° 2′ 46″ from perigee.

From this point she begins to move more slowly, though her actual position is still in advance of the mean.

At 120° from perigee, she is 4° 22′ in advance of the mean position, that is, exactly as she was at mean 60°.

At 150° from perigee she is only 2° 32′ in advance of the mean position.

From 180° onwards she begins to slow down, and when she ought to be 210° from perigee, or 30° from apogee, we find she has reached only 210° *minus* 2° 32′ or 207° 28′. When she ought to be 270° from perigee, she is only 270° *minus* 5° 2′ 46″ or 264° 57′ 14″.

From 270° onwards she begins to move quicker, though she is still behind her mean position. At 300° she is behind by 4° 22′ 30″ and at 330° she is behind her mean position by only 2° 32′ and at 360° or at perigee she is even with her mean position.

192. In like manner we might trace the Sun's mean and actual positions from perigee through apogee back to perigee, using the figures in the last column of the above table, from which we see that the maximum equation of the centre for the sun is 2° 10′ 31″.

193. In our tables (except under Planets' Tables XVII, XVIII) we do not refer to the sun's or moon's position by degrees, but by days, which is more readily intelligible and handier for purposes of calculation.

194. Our Table IX with its numerous divisions (*a*) to (*l*) is simply the result of a careful expansion of the smaller tables from which the figures in Section **196** have been extracted, and we shall see presently how far our Table IX agrees with the original.

We saw that when the moon is actually 32° 32′ from perigee, she is 2° 32′ in advance of her mean position.

We turn the first of these figures into days with the help of Subsidiary Table VII (*a*) and for turning 2° 32′ into days we use Subsidiary Table VI (*a*).

By Sub. Table VII (*a*)	30°	=	2·2962 days.
	2°	=	·1531 day.
	32′	=	·0408 day.
	32° 32′	=	2·4901 days.
By Sub. Table VI (*a*)	2°	=	·1641 day.
	32′	=	·0437 day.
	2° 32′	=	·2078 day. ... (1)

195. We now turn to Table IX (*a*), and look up the equation for an anomaly of 2·4901 days. We there find,

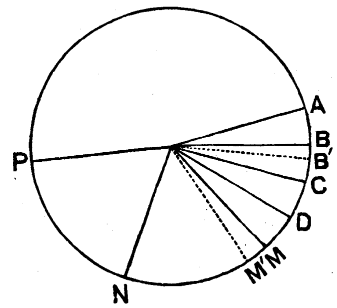
☾'s Anomaly.	Equation.
2·479 days	·207 day.
2·493 days	·208 day.
·014 day	·001 day.

(·490 *minus* ·479=) ·011 day ; $\frac{\cdot 011}{\cdot 014} \times \cdot 001 = \cdot 008$ day.

∴ The equation for 2·490 days = ·2078 day. . . . . (2)

Our result (2) according to Table IX (*a*) is in exact agreement with result (1) deduced from the Siddhânta Table, which shows the anomaly and the equation of the centre in degrees minutes and seconds.

196. The reader will naturally ask why we turned the *anomaly* 32° 32′ into days by means of Table VII (*a*) and the *equation* 2° 32′ by means of Table VI (*a*). We proceed to explain.



197. Let us suppose the sun and the moon to move in the same plane and in circular orbits, describing equal spaces in equal times. Let AB, BC, CD be the mean spaces described by the sun in three successive tithis, and let AM, MN, NP be the corresponding mean spaces described by the moon in the same tithis.

198. If there were no irregularity or eccentricity in the sun's and moon's motions, the first tithi would be the time taken by the moon to gain 12°, that is, the space BM over the sun; similarly the second and third tithis would be the periods in which the moon gains (MN *minus* BC) and (NP *minus* CD) over the sun.

199. But owing to the eccentricity of their orbits we will suppose the sun to be at B′ (actual position) when he ought to be at B (mean position) and the moon to be at M′ (actual position) when she ought to be at M (mean position).

200. Then in the period of a mean tithi (·9843 day) the moon gains over the sun the space B′M′ but our tithi is the period during which the moon actually gains over the sun 12°, *i.e.*, we must cut off from B′M′ a space equal to BM and determine the time during which that space is gained by the moon. Our problem would be solved if we knew the time during which B′M′ *minus* BM was gained by the moon.

201. Now B′M′ *minus* BM = MM′ *minus* BB′. The time during which MM′ – BB is gained, is evidently the time during which MM′ is gained *minus* the time during which BB′ is gained. The times during which MM′ and BB′ are respectively gained are obtained by turning MM′ and BB′ into days according to Sub. Table VI (*a*). This is the reason why in the Tables for the moon's and also the sun's equation of the centre we turn the equation into days invariably by Table VI (*a*). For Nakshatra and Yoga equations other scales which it was unnecessary to give in detail, were used for converting degrees into days.

202. As the equation for the sun as well as the equation for the moon is sometimes positive and sometimes negative, and for *tithis* we have to take the *difference* between the two equations, some confusion would result from our having to change signs so often. Therefore the sun's equations are tabulated, as in the extract given above, with the signs *reversed*. That is why the sun's eccentricity, starting from perigee, is shown in the table in Sec. **189** as negative whereas it is really positive.

203. The reader will also observe that the moon's equation in the above table is, as it should be, positive between perigee and apogee, whereas in Table IX (*a*) it is negative for the same period. The reason is that when the moon does in a given time *more* than the mean space, this is equivalent to a given space being done in *less* than mean time. This is why in Table IX, which derives equations of time from equations of space, the signs of space-equations are reversed. In the case of the sun's equations, a double reversion of signs takes place, first a reversion in order to make the operation of combining the sun's and moon's equations always an addition, and secondly a reversion in order to derive equations of time from equations of space. As a final result, the sun's equation of time is shown in Table IX (*c*) as positive after perigee and negative after apogee. A third reversion takes place in calculating sunrise, where we have to derive equations of space from equations of time. (*Vide* Sec. **255** *infra*.)

204. In calculating tithis, all we have to do, is to sum up the equations of the sun and the moon according to Table IX, whether they are positive or negative. Before taking the moon's equation, however, we in practice add to or deduct from the moon's anomaly the sun's equation and we determine the equations for the net moon's anomaly. The reason is that when the effect of the Sun's anomaly is to diminish or increase the mean time that would be necessary for a tithi, it is necessary to take the moon's anomalies for the altered mean time.

205. Conversely, in calculating *Yogas*, where we have to take sum of the proper anomalistic equations of the sun and the moon, our Yoga equations in Table IX (*i*) [p. 20 (*a*),] have had to be suitably altered as to their signs.

206. For *Nakshatras*, we have to convert the moon's eccentricity, in other words her equation of the centre, into days at the rate of the moon's sidereal motion, *i.e.*, 360° for 27·32166 days and this has accordingly been done in Table IX (*j*), (*k*), and (*l*).

207. The sun's anomaly in Tables IX (*c*), (*f*) and (*h*) is expressed, not in days of the *anomalistic* year, but as days of the *solar* year, and this is done for convenience of use, as explained in Part III, Sec. **253**.

208. For instance, in the above table, the sun's equation for an anomaly of 270° is entered as 2° 10′ 31.″

Now by Table VII (*b*) 270° = 202·92 + 71·02 = 273·94 days.
And by Table VI (*a*) 2° = ·1641 day.
10′ = ·0137 day.
31″ = ·0007 day.

2° 10′ 31″ = ·1785 day.

Since the solar year always begins with a mean anomaly of 102·0802 days, an anomaly of 273·94 days of the anomalistic year really belongs to 273·94 ***minus*** 102·08, *i.e.*, the 171·86th day of the solar year.

Accordingly we find in Table IX (*c*) the equation ·1785 day set down against the 171·86th day of the solar year.

209. The length of the modern anomalistic year is 365·2596 days while that of the Hindu solar year is 365·2587 days. There is no practical error in adopting, as the Indian Siddhântis have done, an identical period for the anomalistic and solar (sidereal) years. The modern anomalistic lunar month is, like the Hindu anomalistic month, 27·5546 days. In converting degrees of anomaly into days we, therefore, put—

Sun's anomaly : [Sub. Table VII (*b*)] 360° = 365·258756484 days.

Moon's anomaly : [Sub. Table VII (*a*)] 360° = 27·45459999 days.

210. The above theory of anomalies and equations is subject to an important variation in practice, which we alluded to briefly in Sec. **208**, but which it is now necessary to dwell on specially. Supposing a mean tithi is accomplished at A days of the solar year, when the Moon's anomaly is B days, then, if the ☉'s equation for A days is—*a*, this means that the tithi would be accomplished (supposing for the moment that the ☾'s anomaly had no influence) in *A*—*a* days of the solar year, at a moment when the moon's anomaly would be *B*—*a*. Now we proceed to determine the influence of this moon's anomaly *B*—*a* and find the moon's equation to be, let us suppose, —*b*. We then put down, as the actual ending moment of the tithi, *A*—*a*—*b* days of the solar year.

211. Strictly speaking, we ought to take (1) the sun's equation for *A* + *b* + *a* days of the solar year, where *b* is the equation (positive or negative) of the moon for anomaly B, and *a* is the ☉'s equation, positive or negative, for A days of the solar year, (2) the moon's equation for anomaly of *B* + *a* days, and then add the equations so found.

212. But in practice this refinement is not necessary for the sun's equation since the maximum value of *b* + *a* is (·4138 + ·1784 =) ·5922 day, and the maximum variation of the sun's equation for this period is about ·0018 day or 6 palas only. We may note, however, that in the test example, worked by Prof. Jacobi for Âshâḍha Śukla 12, K.Y. 3585, and by ourselves in sections **228** and **259** to **262** *infra*, a difference of 4 palas does occur between his method and Mr. Dikshit's, and the learned Professor rightly surmises in a footnote (*Ep. Ind.* Vol. I, p. 430) that the difference must be due to an abridgment in the Hindu method. We now see what the abridgment consists in.

CHAPTER XXIV.

USE OF TABLE VIII.

213. Table VIII is a very comprehensive as well as a very useful table, It is designed to convey some very useful information by itself and taken with Tables VI and VII, it enables us to take the first and most important step in calculating tithis, that is, to ascertain the exact mean ending moment of a tithi in any year, past, present or future.

Let us interpret the table, taking the entries for a particular day, say the 340th day of the solar year, A.D. 1908 (Kaliyuga 5009).

214. Column 1. " Week day 4", *i.e.*, if the first day of the year was 1, the 340th day of the year would be the 4th day of the week, *i.e.*, an addition of 3; the first day of the year being 4, Wednesday, the 340th day would be 3+4=Saturday.

215. Column 2. " Days reckoned from Jan. 1: 5, 6 Decr." and there is the following footnote: " When two dates are given in any of these columns, use the first in a leap year: otherwise use the second ".

The meaning of these entries is that the 340th day of the English Calendar year, reckoned from 1 January, is 5 December if it was a leap year, otherwise it would be the 6 December. By the expression " if it was a leap year ", we mean, " if in the course of reckoning we have had to pass a 29th February ".

The entry in this column is meant to be of use only with reference to the English Calendar. If we want to know, for instance, how many days there are between 15 March and 23 Oct. we take the corresponding figures from col. 2 of Table VIII, *i.e.*, 74 and 296, and we know the interval to be 222 days. We should always remember that the meaning of such problems and their solution is: " From a particular hour on 15th March *to the same hour* on 23rd Oct. there are 222 whole days". (*Vide* note prefixed to Sec. **128**.)

216. Column 3. The third column means : " The 3rd Feb. is the 340th day reckoned from 1 March ". This column is useful for ascertaining the A.D. equivalent of dates in Indian Solar Years which began in March, *i.e.*, up to and inclusive of expired Kaliyuga 4853, A.D. 1752, see the examples in Sections **142, 180** and elsewhere, and rules in Sec. **144**.

217. Column 4. The fourth column means: " The 5th March is the 340th day reckoned from 1st April, if we have passed 29th February in our reckoning: otherwise the 340th day reckoned from 1st April is the 6th March of the following year ". This column is useful in ascertaining the A.D. equivalent of days in solar years, subsequent to A.D. 1752. See examples worked out in Chapters VI, VII and elsewhere.

218. Column 5. The fifth column means:—

" The 340th day of the Hindu Solar Year is, *more or less*, the 6th Panguni (Tamil), the 6th Meenam (Malabar) or the 6th Chaitra (Bengal Solar) ". We say " *more or less* ", because if we want to know exactly what day in the solar year corresponds to 6th Panguni, 6th Meenam, or 6th solar Chaitra, we should first of all determine the beginning of these months, according to (1) the moment of Sankrânti, and (2) the rule of practice followed in the respective provinces. See examples worked out in Sec. **181** and elsewhere.

In the present case, supposing we are concerned with the Solar Year 5011 Kaliyuga, A.D. 1910 the year began as follows:—

	Surya Siddhanta.
(Tab. VI) A.D. 1900 ...	Ap. 12·6204
(Tab. VII) Add for 10 years.	·5876
	Ap. 13·2080
Moment of Solar *Chaitra* Sankrânti according to Sûrya Siddhânta which is followed in Bengal (by Tab. VI.)	334·9053 days.
	335·1133 days of Solar year.

	Arya Siddhanta.
	Ap. 12·5139
	·5868
	Ap. 13·1007
Moment of *Panguni or Meenam* Sankrânti, according to Ârya Siddhânta, which is followed in the Tamil country and in Malabar (by Tab. II.)	334·9200 days.
	335·0207 days of Hindu Solar year.

According to the rule followed in Malabar and the Tamil country, the month begins on the same day on which the Sankrânti occurs, if the Sankrânti occurred before ·50 of a day. [Sec. **144** (3)]. Therefore the 1st Panguni or 1st Meenam in the year, expired Kaliyuga 5011, was the 335th day of the Solar year and the 340th day would be the 6th Panguni or 6th Meenam.

In Bengal the month begins the day after Sankrânti, if the Sankrânti is before ·75 of the day. Therefore in Bengal the first Chaitra in the Solar year K.Y. 5011 (expired) will be the 336th day of the Solar year and the 340th day of the Solar year will only be the 5th Chaitra.

219. Column 6. The 6th column is the central column of the whole Table. The figure 340 in the present case is the guide in using the other columns.

220. Column 7. The 7th column should be read with the 8th. The two columns mean; "In a year where there is no *adhika mâsa,* the 1*st* tithi of the *dark* fortnight (indicated by *dark* figures) of Chaitra, which is called *bahula prathamî* or *badi* 1, ends on the 340th day of the Lunar Year at ·5861 of the day". If we find out the beginning of the lunar year, which we can do from Tables VI and VII, or Tab X, all we have to do is to add to it the ending moment of a tithi, as given in Table VIII, and then we know the day and fraction of day of the Solar Year or of the English Calendar year, when the mean tithi ends. Examples of this process are given throughout the work. If there has been an *adhika mâsa* during the year, which we can ascertain from Table X or XII, the tithi is advanced one month.

221. Thus, supposing we want the 3rd *bahula* tithi of Mâgha in expired K. Y. 5010 (A.D. 1909) when there was an adhika Srâvana, we proceed as follows:—

Commencement of Solar year, A.D. 1909	Ap. 12·9492	(1)
First new moon in Solar year.	7·2745	(2)
18th Mâgha (for which we take from Table VIII the figures against the 18th of the next lunar month, *Phâlguna*)	313·0242	(3)
(1) + (2) + (3), omitting 12 Ap.	321·2479 (Solar Year).	
(1) + (2) + (3), including 12 Ap.	333·2479 (days reckoned from 1 Ap.)	

Our mean tithi, *Mâgha-bahula tritiyâ,* ended on the 321st day of the Solar Year at ·2479 of the day or on the 333rd day of the English Calendar year, reckoned from 1st April (*i.e.*, 27 Feb. 1910) at ·2479 of the day.

222. Column 8. The 8th column, as we have just seen, gives the order of tithis in each lunar month, beginning with the bright fortnight (light figures) and ending with the dark fortnight (heavy figures).

223. Column 9. The 9th column gives the moon's anomaly at the ending moment of each tithi. The figure in this column should be added to the moon's anomaly at the moment of the first new moon in the solar year. The moon's anomaly at the first new moon in the solar year is given in the appropriate column of Table X. Tables VI and VII combined give only the moon's anomaly *at the commencement of the solar year* and if we are using Tables VI and VII to determine the moon's anomaly, we should take care to add the interval *between the commencement of the solar year* and *the first new moon in the solar year.* Thus, suppose we want the exact ending moment of the 12th tithi of the bright fortnight of Âshâḍha in the year A.D. 484 (K.Y. 3585 expired) and we wish to use Tables VI, VII, and VIII ; we proceed as follows :—

	Commencement of Solar year.	First new moon in solar year.	Moon's anomaly.
(Table VI) A.D. 400	Mr. 17·4857	23·8447 d.	21·748 d.
(Table V) *Add* for 84 years.	·7355	0·5453	13·466
	Mr. 18·2212	24·3900	35·214
Add interval between commencement of solar year and first new moon in solar year ..			24·390
			59·604
Deduct two whole anomalistic months (Table II) ...			55·109
			4·495
Add (from Table VIII), for ending moment of Âshâḍha *Sudi* 12 (*no* Adhika masa) ...		70·8734	15·764
		95·2634	20·259
☉'s Eqn. for 95·26 days (Table IX-*c*):	−·0455 *		−·045
			20·214
☾'s Eqn. for 20·214 days (Table IX-*b*) :	+·4138		
	+·3683	+·3683	
Add commencement of solar year A.D. 484		March 18 ·2212	
		March 113·8529 days	

reckoned from 1 Mr. A. D. 484, etc., as in Sec. **260** *infra.*

224. Column 10. The tenth and last column gives the sun's sidereal longitude for Nakshatras and Yogas: that is, it gives the sun's longitude by putting 365·25875 days = 29·5306.

* If we re-calculated the ☉'s eqn. for ☉'s anom. of 95·26 + ·37 (☾'s + ☉'s eqns.), we shall find it to be— 0466 which is the ☉'s eqn. adopted by Prof. Jacobi in Vol. I, *Ep. Ind.* We have noted however in Sec. **212** *supra*, as well as in Sec. **260** *infra*, that this is a refinement seldom required in practice.

The method of using this column is explained in the chapters of the Text, headed "Nakshatras" and "Yogas" and also under "Use of the Tables", *vide* Sections **36**, **49**, **185**, etc.

This column gives the sun's longitude for whole days: for fractions of days, when necessary, we should add the equivalent from Table V (last column). The use of this column is not necessary if we prefer to take the Sun's longitude in degrees from Tables XVII-A and XVII-C. See examples in Secs. **186, 287** and elsewhere.

CHAPTER XXV.

USE OF TABLES VII, VI AND TABLE V—LUNAR CYCLES.

225. The uses of these important tables will have become familiar from the explanation of Table VIII, contained in Sec. **223** and elsewhere. They enable us in fact to use Table VIII, whether for the Sûrya Siddhânta or for the Ârya Siddhânta, and whether for Solar or for Luni-Solar dates. Instead of giving constants, as Prof. Jacobi has done, for K.Y. 3100, 3200, etc., we have given constants for K.Y. 3101, 3201, etc., being the equivalents of A.D. century years. We thereby arrive at a very simple, and at the same time handy, method of determining the A.D. month, day and fraction of day, *marking the commencement of any Hindu solar year*. We believe it is the first time that this method has been used for this particular purpose.

226. At the end of Table VII are given constants for any period of 100, any period of 200, any period of 300 years, etc., up to a period of 3000 years. These figures lead us to a knowledge of the principal lunar cycles in the Indian Calendar, that is, periods of years after which new moons happen on the same day and more or less at the same hour of the Indian solar year. Thus we find from Table VII that, according to the Sûrya Siddhânta, a new moon after 19 complete S. Yrs. recurs on the same day of the S.Y. but 5 hrs. 24′ earlier.

Do.	122	do.	do.	do.	do.	2 „	8′ later.
Do.	385	do.	do.	do.	do.		55′ „
Do.	648	do.	do.	do.	do.		17′ earlier.
Do.	1315	do.	do.	do.	do.	6 ,,	,,
Do.	2329	do.	do.	do.	do.		4½′ later.

N.B.—2300, and 1300 years are the two most important lunar cycles according to Dr. Grattan Guinness, but he takes for comparison the *tropical* year and the Synodical month.

227. Under moon's anomaly the most important cycle is that of 43 years, as after 43 years, the anomaly increases by only ·00458 of a day, *i.e.*, 6 minutes and 3½ seconds.

228. After 46 years, mean new moons occur just 1 day 2 minutes and 3 seconds later. This is a useful fact to remember.

TABLE V.

229. The exact method of using Table V for determining the *ending moments* of Nakshatras and Yogas is not explained, because the first two-thirds of this table are hardly necessary if Table XI is used. The third portion of Tab. V "Sun's Longitude for Nakshatras and Yogas" may be used in combination with the last column of Tab. VIII for determining the nakshatra *concurrent* with a tithi. Numerous examples of this method are given in

Secs. **36**, **49** and elsewhere, but our readers will probably prefer to use the alternative method provided by Tables XVII-A and XVII-C.

230. *Multiplication Table for Jupiter's Samvatsara.*—According to the Sûrya Siddhânta, Jupiter makes 364,220 revolutions (without *bîja* or correction) and 364,212 revolutions (with *bîja* or correction) in a yuga of 4,320,000 years. This means that the mean period of revolution of Jupiter is, with *bîja*, 4332·41581277 days, and without *bîja*, 4332·32065235 days. Each of these periods is nearly 12 years and a Jovian month or $\frac{1}{12}$ of the period of Jupiter's revolution is very nearly equal to a solar year. The Jovian month is therefore called in ordinary language a Jovian year and there are 1·0117 Jovian years in a solar year. Also a mean solar day = ·00277 of a Jovian year.

The multiplication table of Jupiter's samvatsaras is merely the multiplication of each of these quantities from 1 to 99. For further particulars regarding Jovian years, see sections **97** to **106** *supra*.

CHAPTER XXVI.

USE OF TABLE IV (VARA OR WEEK-DAY), TABLES III, II AND I.

231. The *vâra* or week-day is almost invariably quoted in Indian dates. The fact that week-days are the same in European and Indian reckoning (*e.g.*, a Monday in a date a thousand years ago corresponded, as it does to-day, to an Indian *Soma-vâra*, Tamil *Tingal*) is a striking proof of the common origin of the Indo-European mode of reckoning the week. This identity becomes all the more striking when we consider that everything else in the two reckonings (year, month, day of month, hour of day, etc.) is different. The week-day is, therefore, an important link between the two systems and it is well that we have an easy and at the same time a thoroughly accurate and reliable mode of identifying the week-day of any date, however remote, in the past. The ordinary rule laid down in Indian works on astronomical computation is to count the days from the beginning of Kaliyuga (18 Feb., 3102 B.C.) and cast off sevens—a truly formidable operation which few of our readers will venture upon.

N.B.—The number of days from the beginning of Kaliyuga up to any moment under consideration is called the *Ahargana*. This is constantly alluded to in Hindu works on astronomical computation and we have therefore given an *Ahargana* Table (Table XXII, last page of this work), but the reader will have no occasion to use it unless to verify allusions.

232. Table IV of the present work supplies an easy method of verifying the day of the week of the European Calendar. An equally simple, if not a simpler, method might be devised for discovering the week-day of any date of an Indian solar year, but inasmuch as all operations in the present work are directed towards ascertaining the A.D. or B.C. date corresponding to an Indian date, it will be enough if we are able to verify week-days, through the B.C. or A.D. equivalents of Indian dates.

233. The reader will observe in Table IV three lines in heavy type, consisting of the figures

1, 2, 3, 4, 5, 6, 7, or 0.

These are called co-efficients. Each century, year of a century and month of a year has its co-efficient which is shown in Table IV, and all we have to do is to add up the

co-efficients for the component elements of a date, the day of the month being itself an additional co-efficient. Thus if we want to know the week day of 15 July 1910 we proceed as follows :

(Table IV) co-effiicent of 1900	**2**
„ „ of 1910	**5**
„ „ of July	**5**
Day of month	15
Total	27

Dividing 27 by 7, we have as remainder 6, which is equivalent to Friday, the 6th day of the week.

The 15th July 1910 was, therefore, a **Friday**.

It will simplify the operation if we cast off sevens in the very act of summing up the figures. Thus 2 + 5 being 7, we might neglect the first two figures, and 15 being 2 × 7 + 1, we need only add 5 + 1 which is 6 or Friday.

234. This method is applicable to any date, A.D. or B.C., **Old Style** or **New Style**, but the student should first understand the negative character of B.C. dates and also the difference between **Old Style** and **New Style**.

235. **B.C. dates**. All B.C. dates are negative. B.C. 44 is really the year "*minus* 44" in relation to A.D. 1. In determining week-days of B.C. dates, we should first of all convert the dates into positive figures : that is, for the century, we should take the next previous century increased by 1, and for the odd year we should take 101 *minus* the odd year we are dealing with.

Thus, supposing we want the week-day of 18 February 3102 B.C., the first day of Kaliyuga we procced as follows :—

(Table IV). Co-efficient of 3201 B.C. (the century preceding 3102)...........	**3**
„ „ 101 *minus* 2 (the odd year before us) = 99.........	**4**
„ „ February (in an ordinary year)...........................	**2**
Day of month	18
Total	27

Now, 27 divided by 7 leaves 6, *i.e.*, **Friday** which, according to all accounts, was the first week-day of Kaliyuga.

236. **Old Style**.—At present every fourth year A.D. is a leap year, but century years 1700, 1800, 1900, 2000 A.D. are leap years only if the first two figures are divsible by 4.

This rule about century years was adopted, in most European countries (except Russia which still follows the Old Style) under the authority of a decree of Pope Gregory XIII, dated 1582, and in English speaking countries, under the authority of an Act of the British

Parliament, dated 1752. It was ordered by the same Act of Parliament (in order to correct the principal error of the Old Style,) that the day following 2 September 1752 (Wednesday) should be called the "14 September 1752" (Thursday) not the "3 September" (Thursday). This is the famous "dropping of 11 days" by Act of Parliament. **Wednesday, 2 September,** A.D. **1752** was therefore the last day of the Old Style in English-speaking countries and **Thursday, 14 September,** A.D. **1752** is the first day of the English New Style.

For Old Style dates, *i.e.*, dates down to, and inclusive of, 2 Sep. A.D. 1752, the reader should use the co-efficients of centuries appearing under "Old Style" in Table IV.

237. The reader will note that 1600 and 1700 appear under both Old Style and New Style. The reason is that in most European countries, except the United Kingdom and Russia, the New Style came into use in 1582, whereas 1600 and 1700 were Old Style in England.

238. Coming down to the co-efficients of odd years, we note that odd years of centuries have the same co-efficient, whether the style be Old or New, A.D. or B.C: only a B.C. odd year should first be deducted from 101 so as to render it positive. (*vide* Sec. **235**.)

239. Lastly, under co-efficients of months, we notice that the co-efficient of January in a leap year is 5, while in an ordinary year it is 6; and likewise February has 2 for its ordinary co-efficient, and 1 for its co-efficient in leap-years. The co-efficients of the other months do not change for leap-year.

240. In ordinary years, the week-day of the 1st of January is the co-efficient of the year. Thus the co-efficient of the year A.D. 1910 is 7 or 0, and the week-day of 1st January A.D. 1910 is also 7 or 0, *i.e.*, **Sunday**. The reason is that in ordinary years, the week-day of 1st January is the co-efficient of the year *plus* 6 + 1; and the addition of 7, *i.e.*, of a whole week, does not of course change the week-day.

In leap-years the week-day of 1st January is the co-efficient of the year *plus* 5 + 1; *i.e.*, in leap-years the week-day of 1 January is 1 less than the co-efficient of the year.

241. The student who has read the author's "Secret of Memory" will be able to dispense altogether with the use of Table IV for verifying week-days. For particulars of this interesting method, see "**Secret of Memory** *" Chapter **XIV**, p. 108.

Tables III, II, and I.

242. The uses of these Tables will be self-evident. Tables II and III will be constantly handled by the reader, and their principal contents have, therefore, been included in a condensed form in the Eye-Table at the end of the book.

243. The "Limits of Adhika and Kshaya months" which form the middle portion of Table II present the whole of this intricate subject in a veritable nutshell. For explanation, See Sections **18** to **30**. When mean intercalations are required, that is, when Adhika months have to be determined without reference to anomalies, we should apply the "Limits of Adhika months" just as they are.

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PART III.—CONSTRUCTION OF THE TABLES.

[This part is intended to be of use in criticizing the method employed in the present work as well as in suggesting further improvements. It will be of immediate interest to those readers who are acquainted with one or other of the existing methods connected with the well-known names of JACOBI, KIELHORN, SCHRAM, SEWELL AND DIKSHIT, CHHATRE, etc., besides the older and less known names of WARREN and JERVIS. The general reader who makes his first acquaintance with the subject in the pages of this work will find the present part thoroughly intelligible and exceedingly interesting, provided he has mastered the first two Parts.]

CHAPTER XXVII.

TABLES FOR CONVERTING SPACE INTO TIME.

244. The method of calculating and verifying Indian dates, presented in this work, is intended to be of service to the general reader as well as to the scientific expert, the epigraphist, the archæologist, and the historian. The method is perfectly simple and at the same time absolutely correct according to the Siddhântas, so that it has become possible for the first time to dispense with all manner of approximations and rough and ready methods which, however valuable in the hands of an expert, are apt to mislead and confuse, more often than they assist, the general reader. The principal device by which this combination of extreme simplicity with accuracy and absolute fidelity to the original authorities, has been accomplished, is the reduction of all quantities required for calculation to whole days and fractions of a day.

245. The civil day (with its multiple, the week,) is the one measure of time that is common to European and Indian reckoning, everything else (year, month, ghaṭikas, palas hours, minutes, seconds,) being different in the two systems. Accordingly, the civil day and decimals of a day have been adopted throughout this work for expressing all manner of Indian dates as well as for working out ending moments of *tithis*, etc., and also for verifying the correspondence of English and Indian dates. Any decimal of a day can be converted readily into Indian *ghatikas* and *palas* (Tamil, *naligais* and *vinâdis*) or English hours, minutes, and seconds by means of Tables XIX and XX. To assist the reader in very exact computation, the fractions expressing minutes have been carried far enough to show the recurring places. If, for instance, we wish to know how many hours, minutes, and seconds are equivalent to ·40490 of a day, we turn to Table XX and find that ·40486 of a day is equal to 9 hours 43 minutes. The remainder of the decimal fraction is ·00004 which, the same table informs us, is between 3 and 5 seconds. So the answer is, 9 hours 43 minutes 4 seconds. The same decimal fraction is equivalent in Indian time (as we may see from Table XIX) to 24 ghaṭikas 18 palas. Ghaṭikas and hours, as fractions of a day, are also shown in the Eye-table at the end of the book.

246. The reader will notice that in the first three parts of the present work as well as in the connected tables (except the Subsidiary Tables VI-*a*, VII-*a*, and VII-*b*, which are intended mainly for purposes of comparison between the present tables and those of previous

writers on the same subject,) measures of time alone are used, and that measures of space, *i.e.* (*degrees* of celestial longitude, *degrees* of mean anomaly of the sun and moon, etc.) have been altogether excluded. This is the principle known as Largeteau's method, which was first applied to Indian astronomical computation by Professor Jacobi in 1888. Messrs. Sewell and Dikshit have applied the same principle in their "*Indian Calendar*" (1896).

247. The present method is founded on Largeteau's principle, but differs essentially from it as well as all previous applications of it in one important respect. Instead of using Largeteau's method to discover how much *space* has been accomplished at a particular moment of time, the present writer has used the method of day-spaces or space days to discover the *moment of time* at which a particular extent of space has been accomplished. Thus, instead of determining the expired portion of a tithi, corresponding to a given moment of time (*i.e.*, generally, to mean sunrise on a particular day,) as is done by Messrs. Jacobi and Sewell, and then calculating the unexpired portion of the tithi by means of successive approximations, the present writer investigates, directly and once for all, the *ending moment of a tithi*, the very thing required by Indian usage.

248. By setting this object steadily in view, the author has been enabled to reduce to two or three very simple and easy steps, Messrs. Sewell and Dikshit's method, which covers a page and a half (pp. 81, 82) of their "Indian Calendar"; likewise he has considerably abridged Professor Jacobi's process, which consists, in the first place, of an approximation, on Largeteau's method, and thirteen or fourteen *subsequent* steps (*a*) to (*m*), as expounded in Volumes I and II of "*Epigraphia Indica*". As regards Mr. Dikshit's own *very accurate* but *very tedious* method, covering *several pages* of the introduction to Dr. Fleet's "*Gupta Inscriptions*", the present writer has been successful in arriving at *absolutely the same result* as Mr. Dikshit in two lines of working. (See Sections **223, 259**.)

249. The principles upon which space was converted into time for the purposes of the present work are set forth in the following paragraphs.

The principal measure of space, the distance of the moon from the sun, was converted into days in the ratio of 29·530587946 days to 360° in the case of the Sûrya Siddhânta and 29·5305925 days to 360° in the case of the Ârya Siḍdhânta. Subsidiary Table VI-A is the conversion Table for Sûrya Siddhânta.

The increase of the moon's age, according to the *Sûrya Siddhânta*, for each solar year is according to the above rate of conversion, 10·891701134 days. Instead of reckoning the increase of the moon's age, however, the present method reckons directly the *retardation in the date of appearance of the first new moon* in each solar year, for which purpose it is, of course, necessary to deduct 10·891701134 days from 29·530587946 days: result, 18·638886812 days. This, then, is the number of days by which the appearance of the first new moon is retarded each year, and the first thing to do every year is to calculate the interval of retardation for that year. The interval (if we take the retardation for one year) will, *ipso facto*, be the date of appearance of the first or *Vaisâkha* new moon in solar year 1 of Kaliyuga (expired). From this date all other mean new moons for that or any subsequent solar year may be found by the successive addition of multiples of 29·53059 days; and the

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mean ending moment of every *tithi* is given by the addition of the *tithi* equivalent in days (according to the Eye-Table) to the date of mean new moon. Precisely the same method was followed for the Ârya Siddhânta, Lalla's corrections being introduced at the appropriate date.

250. The mean anomaly, in the case of the moon as well as that of the sun, was reckoned from perigee, as in Professor Jacobi's article in the *Indian Antiquary* (1888), and not from apogee, as in his articles in Volumes I and II of *Epigraphia Indica.* For the purpose of Table IX, the moon's mean anomaly was converted into days in the ratio of 27·554599899 days to 360° in the case of the Sûrya Siddhânta, and of 27·554566936 days to 360° in the case of the Ârya Siddhânta. The increase of the moon's mean anomaly for a single solar year is thus :—

Sûrya Siddhânta, 7·048957797 days.
Ârya Siddhânta, 7·049310381 days.

The anomaly of the moon at the first moment of Kaliyuga was taken as 90° from perigee, that being the figure according to all the authorities. Subsidiary Table VII (*a*) is the conversion table for moon's anomaly according to the Sûrya Siddhânta. From the year A.D. 1600, the corrected period of the anomalistic month (27·55459797 days) has been adopted for Sûrya Siddhânta calculations.

251. The moon's mean anomaly, as entered in Table IX, corresponds to the *tithi* or space accomplished, while the equation is the addition to or deduction from the tithi, to be made in order to arrive at the *time* or *ending moment* of the tithi. Consequently, the equation in degrees was in every case added to or deducted from the mean anomaly, and the result, converted into days at the rate of 27·5546 days to 360°, is entered as the anomaly in Table IX.

252. For the purpose of Table IX–*c*, *f*, and *h*, the sun's mean anomaly, reckoned from perigee, was converted into days at the rate of 365·25875 days to 360° [Subsidiary Tab. VII (*b*)] and the sun's equation of the centre was converted at the same rate as the distance of moon from sun (29·53059 days to 360°), because the principal use of the sun's equation of the centre is to correct the mean into the true distance of the moon from the sun. The moon's equation of the centre in Table IX–*a*, *b*, *d*, *e*, *g*, was converted at the same rate, and for the same reason, from degrees into decimals of a day.

N.B.—In the Nakshatra and Yoga Equation Tables, IX–*i*, *j*, *k*, *l*, equations in degrees were converted into days at the rate of 27·32167 days for 360° in the case of Nakshatras, and of 25·4202 days for 360° in the case of Yogas.

253. The actual sun's anomaly, as entered in Table IX, is the result of a series of transformations which had to be carefully executed for each of the 680 stages of the anomaly. According to the Sûrya Siddhânta, the mean anomaly of the sun at the commencement of each solar year, neglecting the slow motion of the perigee which is allowed for in that Siddhânta but not in the others, is 102° 45′ or, in solar days, 104·25093 days. This amount has therefore to be added to the number of days expired in the solar year at a given moment in order that the sun's anomaly for that moment may be correctly expressed in days. From the sum, 2·1707 days have to be deducted for Sodhya. Thus the equation entered in Table IX (*c*) against the 182nd day of the solar year is the equation which really belongs to the following mean anomaly: *viz.*, 182 days *plus* 104·25093 days *minus* 2·1707 days, that

is, an anomaly of 284·0802 days : the latter figure, which is not required in practice, has wholly disappeared from Table IX (*c*), and the equation is simply entered against the day of the solar year for which, in practice, it is likely to be required.

254. For *nakshatras*, the following formula was used: (moon's longitude *minus* sun's longitude) *plus* sun's longitude = moon's longitude for *nakshatras*. As moon's *minus* sun's longitude is expressed according to the ratio 360° = 29·53059 days, the sun's longitude is expressed in the same ratio. Solar days are thus expressed in terms of the synodical month and the result of the reduction, after allowing for śodhya, is exhibited for whole days in the last column of Table VIII, "Sun's longitude for Nakshatras". *Fractions* of solar days can be converted into lunation-longitude by means of the third multiplication table in Table V. The first two multiplication tables in Table V were originally intended to be of use in determining the ending moment of a yoga or nakshatra, but in practice, either Table XI or Tables XVII-A and XVII-C will be found much easier and handier than Table V for the investigation of all kinds of problems connected with nakshatras and yogas. Table XI is referred to in Secs. **263** to **265** *infra* and Tables XVII-A and XVII-C in Sec. **266** *infra*.

255. The moment of *sunrise* for any latitude and longitude in India can be ascertained by means of Table XIII, based on the rules and table of *asus* given by Professor Jacobi in Volume I of the *Epigraphia Indica*. Professor Jacobi has himself given detailed tables for sunrise in Volume II of the same publication, but the results achieved by means of those tables can, it is believed, be more easily arrived at by the present Table XIII. For the purpose of determining the equation of time for each day of the solar year, the sun's equation of the centre, according to Table IX (*c*), was used, with the sign changed : likewise the *asus* given in Professor Jacobi's table and reproduced in Sec. **76** *supra*, had to be suitably modified.

Thus (according to Professor Jacobi's table) in the 10th degree of Northern latitude 30 degrees of Sign 1 of the Zodiac take 1544 *asus* or 1544 × 4 seconds of time to rise;

or in lunation-longitude,

$\left(\frac{30}{360}\right) \times 29{\cdot}53059$, or 2·46088 units of space take 1544 × 4 seconds of time to rise ;

$$\therefore 1 \text{ unit of space takes } \frac{1544 \times 4}{2{\cdot}46088} = 1544 \times 1{\cdot}62 = 2510 \text{ seconds.}$$

This 2510, then, is the factor by which each day's equation of the centre according to Table IX (*c*) should be multipled (so long as the sun is in the first Sign) in order to give that day's equation of time.

And generally, all the *asus* in Professor Jacobi's table were multiplied by $\frac{4}{2{\cdot}46088} = 1{\cdot}62$, and the factors thus obtained were multiplied again by each day's equation according to Table IX (*c*) in the present work : the result was each day's equation of time in seconds as entered in Table XIII of this work. The same result could of course have been arrived at directly from Table XVII-A, "Sun's Equation in degrees for each day of Solar Year".

256. For using the tables in *Epigraphia Indica*, Vol. II, the sun's longitude (first sidereal and then tropical), corresponding to a given day of the solar year, has to be first determined from special tables in Vol. I, *Epigraphia Indica* ; then the *vinâdis* given under each degree of latitude and for each Sign of the Zodiac in Vol. II, *ibid.*, have to be multiplied

by the equation of the centre, which in turn has to be calculated from the sun's mean anomaly, applied with proportional parts to Special Table XXIV–B in Vol. I. *Epigraphia Indica*: only then can the moment of sunrise for a given day in the solar year be ascertained.

257. In the present Table XIII on the other hand, the moment of sunrise for any day of any solar year is obtained by simply adding a figure in the column "Tropical Longitude" to the figure opposite the given day of the solar year in the column "Equation of Time"; and the result is the correction, in seconds of time, to be applied to mean sunrise at Lankâ (6 a.m.) to determine the local sunrise for the given latitude.

258. Column 3 under each degree of latitude in Table XIII is a further step towards simplification, for it gives, for the 80 years ending 1920, the ***total*** correction to be applied to mean Lankâ time in order to arrive at the local time, for each of 30 important places, including Calcutta, Madras and Bombay. In this column the difference in time corresponding to the longitude of each place, measured from Ujjain, is added to the correction for sunrise for each day of the solar year and for each degree of latitude.

Example.—Ashâdha Sukla 12, *Kaliyuga* 3585 (*expired*) A.D. 484.

259. A single test problem, the same as that selected by Mr. Dikshit in his Introduction to *Dr. Fleet's Gupta Inscriptions* as well as by Professor Jacobi in Vol. I of *Epigraphia Indica*, will suffice to demonstrate the absolute reliability and extreme simplicity of the above processes as carried out in the present work. The problem is to determine the ending moment of *Ashâdha sukla dvâdasî* in *Kaliyuga* 3585 (expired), A.D. 484. The ending moment has to be determined (*a*) for Lankâ and (*b*) for the latitude and longitude of Eran (Lat. 24°, Long. 78° 15'). Lastly, the problem has to be worked out, first according to the *Sûrya Siddhânta*, and then according to the *First Arya Siddhânta*.

SURYA SIDDHANTA.

References to Tables.	Days of Solar Year.	Moon's mean Anomaly in days.
(Table X): Kaliyuga 3585; A.D. 484; * March 18·2212.		
First New Moon in Solar year ...	24·3900	4·494
(Table VIII): Âshâḍha śukla 12 ...	70·8734	15·764
	95·2634	20·258
		(☉'s Eqn.)—·0455
Table IX (*c*): ☉'s Eqn. for 95·26 days of Solar Year =	—·0455	
Table IX (*b*): ☾'s Eqn. for anom. of 20·212 days =	+·4138	20·212
	+·3683 + ·3683	
	95·6317	
* English month, day, and fraction of day marking commencement of solar year ...	*March 18·2212	
	113·8529	

Our result is: the tithi ended at ·8529 of a day, *i.e.*, at 51 ghaṭikas 11 palas on the 113th day of the English Calendar, counting from 1st March.

The reader will be pleased to note that this absolutely correct result for the ending moment of a tithi is obtained by *simply adding* up six or seven figures from Tables VIII, IX, and X, and that absolutely no other process is required for any tithi in any year.

260. Now, by Table VIII, the 113th day of the English Calendar, counting from 1st March, is 21st June ;

by Table XIX, ·8529 of a day = 51 ghaṭikas 11 palas ;

by Table IV we arrive at the week-day as follows :—

Co-efficient of 400 A.D.	...	2
Co-efficient of odd year 84	...	0
Co-efficient of June	...	3
Day of the month	...	21
		26

Since 26, divided by 7, leaves remainder 5 = THURSDAY, the final answer is THURSDAY, 21st JUNE, A.D. 484, 51 GHATIKAS 11 PALAS after mean sunrise at Lankâ.

NOTE.—This is the absolutely correct ending moment, according to Mr. Dikshit ; but Professor Jacobi arrives at a result which is 4 palas short. To arrive at the latter result, ☾'s + ☉'s Eqn. must be added as in foot-note to p. (83) to ☉'s Anom. before ascertaining ☉'s Eqn., just as ☉'s Eqn. is in the actual working *supra*, added to ☾'s anom. before ascertaining ☾'s Eqn. This extra step, however, is a nicety seldom required in practice, since the error on this account can never exceed 6 palas. See Sec. **212** *supra*.

TO DETERMINE THE ENDING MOMENT OF THE ABOVE TITHI IN TRUE LOCAL TIME AT ERAN.

261. We first of all find the sun's sidereal longitude for 95·85 days, for which purpose we deduct the *sodhya*, 2·17 days. Remainder, 94 days nearly.

We turn to Table XIII and bring down the entry under Latitude 24° corresponding to the 94th day of the Solar Year, for ☉'s trop.* long. and the entry corresponding to the 95th day for the equation of time.

(1) Equation of time (95th day) : + 148 seconds of time.

(2) ☉'s tropical longitude (94th day) : + 2647 seconds of time.

(3) To these figures from Table XIII we add the time-difference for the longitude of Eran (+2·53 degrees Ujjain longitude), namely, +2·53 × 240 or +608 seconds of time. Total : +148 + 2647 + 608 = +3403 seconds of time.

Now 3403 seconds of time, divided by 60, are 56 minutes 43 seconds or ·0393 of a day. Adding this to the mean Lankâ time already arrived at, *viz.*, ·8529, we obtain, as TRUE LOCAL TIME at ERAN for Âshâḍha Sukla 12, 3585 Kaliyuga, ·8922 of a day or 53 GHATIKAS 32 PALAS which is exactly the same as Mr. Dikshit's result.

ACCORDING TO 1st ARYA SIDDHANTA.

262. The simplest way of arriving at the ending moment of the above tithi according to the first Ârya Siddhânta—and this was apparently the method adopted by Mr. Dikshit—is to deduct from the ending moment, already arrived at, the difference between the *Sodhyas* of the Sûrya and Ârya Siddhântas (2·1707 days *minus* 2·1476 days = ·0231 day), this being the

* NOTE.—In the solar year, 3585 K.Y. we make no correction for the difference between ☉'s sidereal and tropical longitude because in 3600 K.Y., *i.e.*, only 15 years later, the ☉'s sidereal coincided with the ☉'s tropical longitude.

only difference between the Sûrya and Ârya Calendars at the epoch 3585 K.Y. We thus obtain ·8530 day less ·0231 day = ·8299 day= 49 GHATIKAS 48 PALAS (Table XIX). This is exactly Mr. Dikshit's result for the mean Lankâ time of the ending moment of the tithi according to the 1st Ârya Siddhânta. We may make the same deduction for true local time at Eran according to the same Siddhânta, and obtain Mr. Dikshit's result for this also.

NOTE.—There was also a difference of ·001 of a day, *i.e.*, 1½ minutes or 4 palas between the commencement of the solar year, K.Y. 3585, according to the Surya and Arya Siddhantas (*vide* Tables VI and VII in the present work); but apparently Mr. Dikshit neglected this trivial difference.

CHAPTER XXVIII.

CONSTRUCTION OF TABLE FOR NAKSHATRAS AND YOGAS.

263. Table XI contains a very easy method of calculating directly the absolute ending moment of a *nakshatra* or *yoga.*

The interval between new moon and any particular nakshatra n may be expressed by the formula $\frac{29{\cdot}5306-A}{q}+n\times d.$

where A is the sun's longitude at new moon, expressed in terms of a lunation as in the last column of Table VIII, n is the numerical order of the given nakshatra, counting from Revatî, d is the mean duration of a nakshatra in days, and q is the ratio of the length of the synodical to that of the sidereal month.

The above expression may be expanded into

$$\left\{29{\cdot}5306-\left(f+al-2{\cdot}1707\right)\times m\right\}\times\frac{1}{q}+n\times d,$$

where f is the moment of occurrence of the first New Moon in a Solar Year, as given in Table X, a is the number of lunations completed since the commencement of the Solar Year, l is the period of a lunation in days (*i.e.*, 29·5306 days); 2·1707 days are the *sodhya, m* is the factor for converting Sun's longitude into lunation space, according to Table V (last column); $\frac{1}{q}$ is the factor used in the 1st column of Table V $\left(i.e., \frac{1}{1{\cdot}0808}\right)$ and $n\times d$ is the collective duration in days of Nakshatras counted from Revatî up to the end of the given Nakshatra.

We may expand the above expression again as follows:

$$29{\cdot}5306\times\frac{1}{q}+2{\cdot}1707\times m\times\frac{1}{q}+n\times d-f\times m\times\frac{1}{q}-al\times m\times\frac{1}{q}\cdot$$

Now all these expressions connected by + or −, except, $f\times m\times\frac{1}{q}$ may be calculated *once for all* for every *Nakshatra* in the lunar year, for

$$29{\cdot}5306\times\frac{1}{q}=27{\cdot}32167\ ;$$

$$2{\cdot}1707\times m\times\frac{1}{q}=\ {\cdot}16237\ ;$$

And the expression $({\cdot}16237+n\times d-al\times m\times\frac{1}{q})$, when calculated for each Nakshatra becomes one of the figures given in Table XI under "Interval between New Moon and each Nakshatra".

There remains $f\times m\times\frac{1}{q}$, whose maximum value is $29{\cdot}5306\times m\times\frac{1}{q}=2{\cdot}20891$ (the difference between 29·530587946 and 27·321674163, the lengths of the synodical and sidereal months).

The values of $f \times m \times \frac{1}{q}$, less than the maximum, may be calculated by means of the Nakshatra correction Table in Table XI.

Accordingly all that we have to do, in order to know the mean ending moment of any Nakshatra, is to take the corresponding figure from the "Interval" Table XI and deduct the value of $f \times m \times \frac{1}{q}$ as obtained from the "correction" table in Table XI.

N.B.—The correction tables might have been made additive instead of subtractive, by (1) subtracting all the quantities in the correction tables from 2·20890 in the case of Nakshatras and from 4·11036 in the case of Yogas, and (2) subtracting 2·20890 and 4·11036 respectively from all the intervals in the body of Table XI. This will be attended to in a future edition of the work, should a second edition be called for.

264. Thus, supposing the mean ending moment of *Mûla* Nakshatra in the month of (lunar) *Kârttika* in A.D. 1910, is required :—

The mean ending moment of *Kârttika* New Moon is (by Table X) November	2·30
The integer and first two decimal places of the "Interval" for "*Kârttika* Mûla" (Table XI)	6·13
	Nov. 8·43
Deduct $f \times m \times \frac{1}{q}$, *i.e.*, the equivalent of 25·91 according to the correction table in Table XI; 1·87 + ·07 = 1·94.	−1·94
	Nov. 6·49

This is the mean ending moment of the Nakshatra *Mûla* in Lunar Kârttika, A.D. 1910.

If we want the absolute ending moment, we calculate the anomaly :

		Days.
Moon's mean anomaly at commencement of Solar Year	...	0·535
Add increase of anomaly up to Kârttika New Moon	...	11·866
Add " Interval " less $f \times m \times \frac{1}{q}$	...	4·19
		16·59
Corresponding Equation for Nakshatras (Table IX–*k*)	...	+·246

Adding this equation to the mean ending moment, Nov. 6·49, we have Nov. 6·74 or (by the Eye-Table) 44½ ghaṭikas after mean sunrise on Nov. 6, A.D. 1910. We could, of course, if we had liked, have calculated the absolute ending moment to four places of decimals instead of to two.

265. *Yogas* are worked in the same manner, by using the corresponding portions of Table XI, *i.e.*, by deducting from the " Yoga Interval ". (for the given lunar month and given Yoga) the correction for the Solar Year according to the Yoga correction table in Table XI.

266. When a *Yoga* and *Nakshatra* are cited with the *tithi* as in the example in Sec. **98** *supra*, it will generally be enough to ascertain the nakshatra and the yoga which were concurrent with the tithi and this can most easily be done as follows :—

Sun's anomaly at ending moment of tithi, 203·31 days.

By Table XVII–A, the ⊙'s longitude corresponding to 203 days is	197·94°
" XVII–C, " " " ·31 day is	·31°
	198·25°
The tithi being the 9th, the moon's elongation was $9 \times 12° =$	108·00°
Total	306·25°

This (by Eye-Table) is the longitude for Nakshatra *Dhanishtha.*

For. *Yoga* we add 2 × Sun's Longitude to Moon's Elongation.

That is, the yoga longitude is $108{\cdot}00° + 2 \times 198{\cdot}25° = 108{\cdot}00° + 396{\cdot}50° = 504{\cdot}50°$

Deducting 360° which is one complete revolution, we have $504{\cdot}50° - 360° = 144{\cdot}50°$, which (by Eye-Table) is the Longitude of No. 10 *Ganda* Yoga.

267. When we wish to find the ending moment of a Nakshatra or Yoga, we should apply Table XI as follows :—

In our example, the mean tithi ended at 8·86 days after *Kârttika New Moon.* The age of the first new moon in the solar year being 20·27 days, the corresponding Nakshatra correction is (by Table XI) 1·50 + ·02 = 1·52 = (by Eye-Table) 1 day 31 ghaṭikas and the Yoga correction (by Table XI) 2·78 + ·04 = 2·82 = 2 days 49 ghaṭikas.

From Table XI-A under col. VII Kârttika we obtain—

	Nakshatra. d.	gh.	p.		**Yoga.** d.	gh.	p.
No. 23 Dhanishṭha	10	10	59	No. 11 Vriddhi	11	24	59
Deduct correction	1	31			2	49	
	8	40			8	36	

N.B.—The coincidence of a particular *Yoga* with a particular *Nakshatra* happens only once a year, and we could, by means of this coincidence, discover the month and the tithi even if these were not quoted.

This is the Tithi interval, 8 d. 51½ gh—11½ gh. This is the Tithi interval 8 d. 51½ gh.—15½ gh.

We can, with the last line of corrections, use for the Nakshatra and Yoga the ⊙'s and ☾'s Anomalies already found (Sec. **98**) for the tithi, *i.e.*, ⊙'s Anom. 206 days 18½ gh.; ☾'s Anom. 25 days 16 gh.

Our Nakshatra Eqn. will be that for ☾'s Anom. of 25 d. 16 gh. *less* 11½ gh., or for 25 d. 4½ gh.: Eqn. (Tab. IX-*l*) is + 11½ gh.

Our Yoga ⊙'s Anom. will be 206 d. 18½ gh. *less* 15½ gh. or 206 d. 3 gh., for which ⊙'s Yoga Eqn. (Tab. IX-*i*) is + 7 gh. 42 p.

Our Yoga ☾'s Anom. will be 25 d. 16 gh.—15½ gh. = 25 d. ½gh. for which ☾'s Yoga Eqn. (Tab. IX-*i*) is +10 gh. 55 p.

The sum of ⊙'s and ☾'s Eqns. for Yoga is + 7 gh. 42 p. + 10 gh. 55 p. = + 18 gh. 37 p.

These equations can be added to the mean ending moments of Nakshatra and Yoga.

The equation being added to Nakshatra mean ending moment, we have, as the absolute ending moment of the Nakshatra, Oct. 19·76, *i.e.*, 42½ gh.—11½ gh. + 11½ gh. = 42½ gh. on 19 Oct. A.D. 1474.

The Yoga ended at 42½ gh. — 15½ gh. + 18½ gh. = 45½ gh., when tithi also ended (*vide* Sec. **98**).

Now Dhanishṭha Nakshatra ends when moon's longitude is 306·7° (Eye-Table) and since the moon is said to have been in Kumbha râśi, her longitude must have been between 300° and 330° (Eye-Table).

Since the event happened between 300 and 306·7 degrees of moon's longitude, the exact hour is defined as being less than 30 ghaṭikas before the end of the Nakshatra (since by Table XVII-D the moon's long. increases by 6·7° in ·50 of a day).

N.B.—With reference to line 5 of Sec. **98**, the Tithi being the 18th, the *karana* (*vide* list in Table III) must have been *Kaulava* and must have ended at the same moment as the 9th tithi (for the reason explained in Sec. **55** *supra*).

CHAPTER XXIX.

INVESTIGATION OF ADHIKA AND KSHAYA MONTHS.

268. *Adhika* months are the cream of the Indian Calendar, while *kshaya* months are its *crème de la crème.* Figures of speech apart, it is certainly true that the success or failure of any computer in deducing *adhika* and *kshaya* months is the measure of his success or failure in dealing, as a whole, with the Indian Calendar. How far the present method satisfies this ordeal, will be for competent judges to decide.

269. Two in dependent English lists of *adhika* and *kshaya* months are at present in existence, the first by Prof. **Chhatre** (reproduced in *Ind. Antiq.*, Vol. XXIII, pp. 105–108), and the second by Messrs. **Sewell** and **Dikshit**. The lists in **Patell's** *Chronology* and **Cunningham's** *Indian Eras* are obviously copied, without check, from Chhatre whose reputation was and is, sufficient to justify such a procedure.

Messrs. Sewell and Dikshit certainly exercised an independent and erudite judgment in revising Prof. Chhatre's list, and they declare, in several parts of their work, the indubitable superiority of their list to that of *Chhatre.*

270. For the purposes of Table X in the present work, it was necessary to weigh carefully the merits of Mr. Chhatre's and Mr. Dikshit's calculations wherever they differed. The palm must no doubt be awarded, as a general rule, to Mr. Dikshit, but he seems to have failed, by oversight, to take notice of the *kshaya* months in A.D. 507 and A.D. 751 which are investigated below.

Adhika Months.

A.D. 629.

271. In regard to this year Messrs. Sewell and Dikshit are at some pains to explain (under *Additions and Corrections*, p. 150 of "Indian Calendar") that Chhatre's entry of Adhika Kârttika is wrong and that their own entry of Adhika Âśvina is correct. Let us verify this statement, and in so doing, note the comparative brevity and simplicity of our method.

	Days.	☉'s and ☾'s Eqns.	☾'s Anom.	
First New moon in Solar Year A.D. 629,	10·2145		20·456	
Add for 7th New moon	177·1835	−·172	11·856	
		−·342		
	187·3980		32·312	
	−·514	−·514	−·172	☉'s Eqn.
7th or Tulâ Sankrânti 186·9355:	186·884		32·140	
			27·555	
			4·585	

The 7th new moon was therefore *Asvina,* and obviously the 6th new moon also was an *Asvina*; so that the Adhika month was, as stated by Messrs. Sewell and Dikshit, Âśvina, not as stated by Chattre, Kârttika.

A.D. 979.

272. In each of the next two cases Mr. Chhatre was out of reckoning by a very small margin. For A.D. 979 Messrs. Sewell and Dikshit have given *Srâvana* as the Adhika month, whereas *Bhâdrapada* is the Adhika month in that year according to Prof. Chhatre's list. The calculations must in all these cases be made by the *Sûrya Siddhânta* and the foot-note to p. (9) of the text should be applied.

	Days.	☾'s Anomaly.
First New moon in Solar Year A.D. 979,	7·5649	5·023
Add for 5th New moon	118·1223	7·904
	125·6872	12·927
Sum of ⊙'s and ☾'s Eqns.: −·1259−·1005=	−·2264	−·126 (⊙'s Eqn.)
5th or Simha Sankrânti 125·4755:	125·4608	12·801

The Adhika month was *Srâvana* by ·0147 day, *i.e.*, nearly one ghaṭika, and in this instance Messrs. Sewell and Dikshit are right. Our Table X shows Adhika Srâvana.

A.D. 1199.

	Days.	☾'s Anom.
First New moon in Solar Year	3·3683	8·539
3rd New moon in „	59·0612	3·952
	62·4295	12·491
		+·055 (⊙'s Eqn.)
		12·546
Sum of ⊙'s + ☾'s Eqns. + ·0555 − ·1261 = − ·0706	− ·0706	
3rd or Mithuna Sankrânti 62·3555:	62·3589	

The Adhika month, 3rd new moon, was *Ashâdha*, as stated by Messrs. Sewell and Dikshit, not *Jyeshtha*, as determined by Chhatre. Our Table X shows Adhika Âshâḍha.

It happens that this very interesting Adhika month, the 3rd lunar month in the year A.D. 1199—1200 is quoted in a South Indian inscription, discussed by Dr. Fleet at p. 156 of the *Indian Antiquary*, Vol. XIX (1890). In the inscription itself the Adhika month is identified as *Ashâdha*, not as *Jyeshtha*. Of course the margin of difference is so small (5 minutes), that a calculator might, without being convicted of error, place an *adhika* month of this description on either side of the Sankrânti. If we did not know that the difference was so small, we should be at a loss to account for the discrepancy between the statement in the inscription and Prof. Chhatre's list. As it is, a more striking instance cannot be imagined than this actual one, to demonstrate the value and importance to an epigraphist of a knowledge of how to calculate tithis accurately.

Kshaya Months.

A.D. 507.

	Days.	⊙'s and ☾'s Eqns.		☾'s Anom.	
First New moon in Solar Year	10·1256	—·129		14·587	
Add for 8th New moon in Solar Year	206·7141	—·064		13·832	
(1) 8th or Vrischika Sankrânti 216·8289 :	216·8397	—·193	=216·6467	28·419	
				27·555	
				0·864	
				— ·129	(⊙'s eqn.)
				0·735	
		+·039		0·864	
Add for 10th New moon	59·0612	—·355		3·952	
(2) 10th or Makara Sankrânti 275·637 :	275·9009	—·316	=275·5849	4·816	
				+ ·039	(⊙'s eqn.)
				4·855	
		+·120		4·816	
Add for 11th New moon	29·5306	—·412		1·976	
(3) 11th or Kumbha Sankrânti 305·085 :	305·4315	—·292	=305·1395	6·792	
				+ ·120	(⊙'s eqn.)
				6·908	

273. From (1) it follows that the 8th new moon was Kârttika and it is apparent from the time of occurrence of that new moon (1 ghaṭika before the end of the solar month) that the 7th new moon also must have been a *Kârttika*.

From (2) it follows that the 10th new moon was Pausha. [Foot-note to p. (9) of Text.]

From (3) it follows that the 11th new moon was Phâlguna. [Do. do.]

∴ The new moon between Pausha and Phâlguna, viz., *Mâgha*, was *kshaya* in this year.

It is also evident from the time of occurrence of this Phâlguna that the 12th new moon also must have been a Phâlguna.

Against this year Messrs. Sewell and Dikshit have noted only "Adhika Phâlguna", whereas Chhatre mentions also a *kshaya* month, Pausha. We have just seen that the kshaya month was really *Mâgha*, which is accordingly noted in our Table X.

Nor would the case have been different under the Ârya Siddhânta, since, as we remarked in the foot-note to Sec. **161** *supra*, the new moons under the Ârya Siddhânta at this epoch occurred only ·0231 of a day before the Sûrya Siddhânta new moons, and this would have made no difference as regards *adhika* and *kshaya* months in the present case.

A.D. 751.

274. Only an *Adhika* Chaitra without a *kshaya* month is noted in this year by Messrs. Sewell and Dikshit, whereas Prof. Chhatre notes *Adhika* Kârttika and *Adhika* Chaitra besides Mârgasîra *kshaya*. Let us work for the different new moons :—

	Days.	⊙'s and ☾'s Eqns.	☾'s Anom.
First New moon in Solar Year A.D. 751:	10·3034	−·172	26·321
Add for 7th New moon	177·1835	−·304	11·856
(1) Beginning of 7th Solar month 186·9355 :	187·4869	−·476 = 187·011	38·177 − ·172 (⊙'s Eqn.) − 27·55 = 10·450
			27·555
		−·128	10·622
Add for 8th New moon	29·5306	−·133	1·976
(2) Beginning of 8th Solar month 216·828 :	217·0175	−·261 = 216·756	12·598 − ·128 (⊙'s Eqn) = 12·470
		−·052	
Add for 9th New moon	29·5306	+·077	1·976
(3) Beginning of 9th Solar month 246·3192 :	246·5481	+·025 = 246·573	14·574 − ·052 (⊙'s Eqn.) = 14·522
		+·040	
Add for 10th New moon	29·5306	+·335	1·976
(4) Beginning of 10th Solar month 275·6369 :	276·0787	+·375 = 276·454	16·550 + ·040 (⊙'s Eqn.) = 16·590
		+·120	
Add for 11th New moon	29·5306	+·385	1·976
	305·6093	+·505	18·526
(5) Beginning of 11th Solar month 305·0850 :	305·6093	+·505 = 306·114	18·526 + ·120 (⊙'s Eqn.) = 18·664
		+·169	
Add for 12th New moon	29·5306	+·412	1·976
(6) Beginning of 12th Solar month 334·9053 :	335·1399	+·581 = 335·721	20·502 + ·169 (⊙'s Eqn.) = 20·671
		+·176	
Add for 13th New moon	29·5306	+·357	1·976
(7) End of 12th Solar month 365·25875 :	364·6705	+·533 = 365·203	22·478 + ·176 (⊙'s Eqn.) = 22·654

N.B.—The above is a convenient and concise method of working for *Adhika* and *Kshaya* months.

From (1) and (2) it follows [applying the rule in foot-note to p. (9) of the Text], that the 7th and 8th new moons were both Kârttika, the first of them being *Adhika*.

From (3) it follows that the 9th new moon was *Pausha*.

∴ The new moon between Kârttika and Pausha, viz., *Mârgasîra* was *kshaya* and it is accordingly noted as such in our Table X.

From (4) it follows that the 10th new moon was *Mâgha*.

From (5) it follows that the 11th new moon was *Phâlguna.*

From (6) and (7) it follows that the 12th and 13th new moons were both *Chaitra* the first of them being *adhika.*

It would appear that by oversight Messrs. Sewell and Dikshit failed to take account of these facts, notwithstanding that Prof. Chhatre had mentioned them.

A.D. 1963.

275. Messrs. Sewell and Dikshit, after noting that the last *Kshaya* month before our time was in A.D. 1822, go on to remark: "We are led to suppose that there will be no suppressed month till at earliest A.D. 1944, and possibly not till A.D. 1963".

There is no reason why the matter should be treated as one for conjecture, since anybody familiar with the present method can calculate that the next *Kshaya* month will be in A.D. 1963, as we have indeed noted in Table X. There will be another in A.D. 1982, as noted in the same Table.

CHAPTER XXX.

CONSTRUCTION OF PLANETARY TABLES XVII AND XVIII.

276. The mean sidereal periods, used in Tables XVII and XVIII, are those of modern European astronomy adjusted to the Indian sidereal year. The following table compares the sidereal period of each planet, ordinarily given in Indian astronomical works, with that adopted in this work as well as with the results of modern astronomy.

Planet.	Indian Sidereal period.	Modern Astronomy (Encycl. Brit.)	Figure adopted in this work.
	Days.	Days.	Days.
Mars	686·99749	686·979645	686·98814
Mercury	87·969702	87·969258	87·96939
Jupiter	4332·3206	4332·584821	4332·92322
Venus	224·698568	224·700786	224·70169
Saturn	10765·7730	10759·219817	10761·30664

277. In the first place it was thought unnecessary to observe in regard to planetary sidereal periods the same scrupulous adherence to Indian authorities which is incumbent in the case of the solar year and the moon's synodical month. In the next place, the difference in the length of the sidereal year between Indian and modern astronomy results in a slight displacement of the starting point of Indian celestial longitude, which displacement amounts to 7′ 6·26″

in 50 years and should be added to the precession, amounting, according to modern astronomy, to 41′ 52·27″ for fifty years. The total difference between Indian sidereal and modern tropical longitudes is thus 48′ 58·53″ for 50 years or 59″ per annum, while Bhâskara's estimate of the precession, 59·9007″ per annum, is only slightly larger.

278. If the slight annual displacement of the zero point of Indian longitudes, which is a practical postulate of Indian astronomy, however unrecognized in theory, is applied to the sidereal places of planets, their mean sidereal periods will have to be altered as shown above. In this manner alone will it be possible to apply to the planets the same precession as is applied to the sun, for the purpose of converting sidereal into tropical longitude.

N.B.—By taking this slight liberty with the mean sidereal periods of planets, the exact agreement of the mean place of any planet with its place in modern astronomy is secured, and the serious divergences between the two systems, commented on in Whitney's notes on the *Surya Siddhanta* have been effectually avoided. As a result, the place, whether mean or actual, assigned to any planet in Tables XVII and XVIII, may not tally exactly with Indian calculations, but the difference will generally be found to be very slight, while there is an obvious advantage in having for every possible epoch a mean place for each planet, identical with that assigned to it by modern astronomy.

279. The planetary anomalies and annual equations, which were used for Tables XVII and XVIII of this work, were taken from *Warren's Kâla Sankalita* and are ascribed by that author to a local Telugu Astronomer of the time, called *Vavilâla Kuchinna.* The tables are no doubt old-fashioned, but they are handy and sufficiently accurate for the purposes of Indian horoscope-chronology. This is the main reason for resuscitating them into present-day use.

280. The figures as to longitudes of apses and nodes and the greatest apparent latitudes of planets (Table XVII) are taken, partly from Warren and partly from the Siddhânta Siromani.

PART IV—PLANETS AND PLANETARY CHRONOLOGY.

281. Indian astronomy reckons nine planets, spoken of collectively as *navagrahas,* namely the Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Rahu and Ketu. It will be seen that the first seven are named in the order of the days of the week, and this is always the order in which they are referred to in Indian astronomy. Rahu is another name for the moon's ascending node, one of the points at which the moon's orbit cuts that of the Sun (the ecliptic), the other point, or the descending node, being called Ketu. An eclipse cannot happen except when the moon is at either node and the sun is at the same or the opposite node; hence the popular legend which depicts *Rahu* as a dragon swallowing up the moon or the sun at the time of an eclipse. All the planets, except Rahu and Ketu, move like the Sun, from West to East in their apparent path round the earth. Rahu moves in the opposite direction, and Ketu is always assigned a position 180° from that of Rahu.

282. All the data necessary for calculating the geocentric longitude and latitude of the five planets, Mars, Mercury, Jupiter, Venus and Saturn, are given at pages 200 to 206 of the Tables (Table XVII).

283. The longitude of any planet is its distance, measured in degrees, from an arbitrary point in the ecliptic, which point may perhaps best be defined as the 0 point of the Sun's mean longitude. The Sun's *mean* longitude is always 0 at a certain part of the Indian Solar Year, namely, at 2·1707 days from the commencement of each Indian Solar Year: while *at the moment of commencement* of the Indian Solar Year, the Sun's *actual* longitude is 0. The difference between the Sun's mean and actual longitude at any time is his equation of the centre, and this difference is due to his varying pace at different times of the year as he journeys round the earth. The Sun's mean longitude and equation for every complete day of the Solar Year are given in Table XVII-A (pp. 207, 208), and these are most important data in Indian astronomy. Table XVII-C (p. 209) gives the increase of the Sun's mean longitude for hundredth parts of a day.

284. The Sun's mean longitude at any moment is ascertained by deducting 2·1707 from the number of days and fraction of day elapsed since the commencement of the Indian Solar Year, and applying to the result the Table of Sun's longitude (Table VII-B, p. 8). The difference between the Sun's longitude thus calculated and the longitude for the same moment given in any European *Nautical Almanac*, is the true Indian precession, and this difference should always be added to the longitude of a planet given in this work in order to ascertain the corresponding longitude according to the *Nautical Almanac*. The following table gives the precession to be added to Indian celestial longitudes at various epochs since A.D. 520 (when the European and Indian longitudes coincided), in order to arrive at the European celestial longitude. The rate of precession adopted for this table is 1 degree for every 61¼ years, or 59″ per annum, the rate arrived at in Sec. **277** *supra*.

(The European longitude is called the *tropical* longitude of a planet from its being regulated by the tropical year, whereas the Indian longitude is generally called a *sidereal* longitude from its being regulated by the sidereal year.)

A.D.	Kaliyuga.	Indian Precession in Degrees.	A.D.	Kaliyuga.	Indian Precession in Degrees.	A.D.	Kaliyuga.	Indian Precession in Degrees.
520	3621	0·0	**1040**	4141	8·5	**1561**	4662	17·0
551	3652	0·5	**1071**	4172	9·0	**1591**	4692	17·5
581	3682	1·0	**1102**	4203	9·5	**1622**	4723	18·0
611	3712	1·5	**1132**	4233	10·0	**1653**	4754	18·5
642	3743	2·0	**1163**	4264	10·5	**1684**	4785	19·0
673	3774	2·5	**1194**	4295	11·0	**1715**	4816	19·5
704	3805	3·0	**1225**	4326	11·5	**1745**	4846	20·0
735	3836	3·5	**1255**	4356	12·0	**1775**	4876	20·5
765	3866	4·0	**1285**	4386	12·5	**1806**	4907	21·0
796	3897	4·5	**1316**	4417	13·0	**1837**	4938	21·5
826	3927	5·0	**1347**	4448	13·5	**1867**	4968	22·0
856	3957	5·5	**1377**	4478	14·0	**1898**	4999	22·5
887	3988	6·0	**1408**	4509	14·5	**1929**	5030	23·0
918	4019	6·5	**1439**	4540	15·0	**1960**	5061	23·5
949	4050	7·0	**1469**	4570	15·5	**1990**	5091	24·0
980	4081	7·5	**1500**	4601	16·0	**2020**	5121	24·5
1010	4111	8·0	**1531**	4632	16·5	**2051**	5152	25·0

285. We will now explain briefly how the planetary tables at pages 200 to 206 are to be used in practice.

The mean longitude of a planet at any moment is obtained by adding together its mean longitude at the commencement of the century, the mean motion for the given odd year, and the mean motion for the given day. Thus for 202·54 days of the Indian Solar Year, A.D. 961 (Kaliyuga 4062) we have :—

	Degrees.
Mars' mean longitude at commencement of K.Y. 4001,	79·4873
Mar's mean longitude for 61 years,	155·72
" " " 202 days,	105·85
" " " ·54 day,	·2830
Answer	341·34°

286. This is the mean longitude of the planet in his path round the Sun, though not his longitude, as he appears to us from the earth. To obtain this, which is called the geocentric longitude, and which is the longitude usually cited in Indian chronology, we have to perform a fairly tedious sum. So far as the geocentric longitudes of the planets from A.D. 1840 to A.D. 1919 are concerned, the reader is saved the trouble of doing any such sum, because the geocentric longitudes, as finally determined for Lankâ Sunrise on every tenth day in each solar year from A.D. 1840 to A.D. 1919, are given in a handy form at pages 210 to 225 (Table XVIII), so that all he has to do to ascertain the position of the planets in a horoscope, say, for April 13, A.D. 1911, is to look up the particular day of the Solar Year (in this instance 0 day against A.D. 1911 on p. 224) and set down the positions of the planets as follows :—

Sun, 357° + ·4 + 2·7 = 360·1 or 0·1° in Mesha ;
Mars, 298·4°, *i.e.*, 28·4° in Makara ;
Mercury, 16·3° in Mesha ;
Jupiter, 198·8°, *i.e.*, 18·8° in Tulâ ;
Venus, 31·8°, *i.e.*, 1·8° in Vrishabha ;
Saturn, 14·3° in Mesha ;
Rahu (Table XVII-B), A.D. 1911 : 21·90° in Mesha.

(*N.B.*—Only *mean* places, and not actuals, are calculated for Rahu and Ketu).

Ketu (*vide* Sec. **281**) 21·90° + or − 180° = 201·90,° *i.e.*, 21·90° in Kanyâ. The result for Ketu is the same, whether 180° are added to, or deducted from, the longitude of Rahu.

287. The place of the moon, the only remaining planet, can be deduced either from the tithi or from the Nakshatra. The latter method is illustrated in Sec. **292** *infra*. The former, which is easier, is shown below :—

We first of all calculate the ending moment of the tithi, as usual.

		d.	gh.	☉'s Anom. d.	gh.	☾'s Anom d.	gh.
(Tab. XII, p. 151) New Moon, March 1911 ...	Mar.	29	57½	350	45	22	16¼
(Eye-Table) Collective duration of 15 tithis ...		14	46	14	46	14	46
	Mar.	44	43½	365	31	37	2¼
Deduct 1 anomalistic year and month respectively				365	15	27	33⅓
				0	16	9	29
(Eye-table) ☉'s Eqn. = + 10½ gh ; ☾'s Eqn. = − 21 gh.						☉'s Eqn.	+ 10½
Sum of ☉'s and ☾'s Eqns. ...			− 10½			9	39½
	Mar.	44	33 = 33 gh. on Ap. 13.				

This was the ending moment of the tithi, when the moon's elongation or distance from the sun was $15 \times 12° = 180°$. For the moon's longitude at any moment = moon's elongation *plus* Sun's Longitude. (Secs. **36**, **254**.)

Therefore, if we find the Sun's longitude at ending moment of tithi and add it to the moon's elongation, 180°, we shall obtain the moon's longitude, or which is the same thing, the Nakshatra current at ending moment of tithi.

⊙'s Longitude at Sunrise = 0·1° (see above).

Do. at ending moment of tithi = 0·1° *plus* increase of longitude for 33 ghat. or ·55 of a day (Eye-Table.) This increase, by Table XVII-C is ·54°.

∴ ⊙'s Longitude at ending moment of tithi = 0·1° + ·54° = 0·64°.

∴ Moon's do. do. do. = 180° + 0·64° = 180·64°.

The corresponding Nakshatra (by Eye-Table) was *Chitrâ*, and the Râśi *Tulâ*.

We want however the moon's longitude for sunrise on the same day which was 33 ghaṭikas or ·55 day (Eye-Table) earlier.

The increase of ☾'s Long. for ·55 day is roughly (Tab. XVII-D) 7·33°

∴ ☾'s Long. at Sunrise 13 Ap. A.D. 1911 will be roughly 180·64° − 7·33° = 173·31° which will be 23·3° in Kanyâ. The Nakshatra is *Hasta*. (Eye-Table.)

N.B.—In strictness we should have ascertained the total duration of the Nakshatra and the unexpired part of the Nakshatra at sunrise. If this was ·50, Table XVII-D would give us 6·6° which we should deduct from 180·64°. Result 174·0° which is *Chitra* Nakshatra.

288. For years before A.D. 1840 the true geocentric longitudes of planets will have to be calculated in the following manner :—

The planets are divided into two classes: *Inferior* (Mercury and Venus) and *Superior* (Mars, Jupiter and Saturn.) Three quantities, which we may call *a*, *b*, *v*, in the case of the inferior planets, Mercury and Venus, and A, B, N, in the case of the superior planets, Mars, Jupiter and Saturn, have to be determined first of all, before working out the actual geocentric longitude of any planet. Having determined these three quantities, the further procedure is the same, whether the planet is superior or inferior. We give below the calculations (1) for an *inferior* planet, Mercury, and (2) for a *superior* planet, Mars, for 202·54 days of the Solar Year A.D. 961 (*i.e.*, 9 ghaṭikas after sunrise on 11th October A.D. 961.)

I. *True Geocentric Longitude of Mercury for 202.54 days of the Indian Solar Year A.D. 961-62.*

Time and English date. 9 ghatikas after sunrise on 11th October A.D. 961.

MERCURY (Inferior Planet).

(1)—*a*. Mean Long. of Mercury *minus* Mean Long. of Sun.

Mean Long. of Mercury.		Mean Long. of Sun.	
For A.D. 900 (p. 201)	173·55°	202 days (XVII-A)	196·95°
61 years „	100·37°	·54 day (XVII-C)	·53°
202 days (p. 202)	106·65°		
·54 day	2·21°		197·48°
	382·78°		
Deduct	360°		
	22·78°		

382·78°
−197·48°
185·30° *a*

(2)—*b*. Long. of Mercury's Apsis *minus* Sun's mean Long.
Long. of Mercury's Apsis for A.D. 900 (p. 201)* ... 220·44°
Sun's mean Long. (as above): −197·48°
22·96 *b*

(3)—*v*. Mean Long. of Sun ... 197·48° *v*

(4) Mercury's annual equation for *a* (p. 202): − 3·0° (4)

(5) Take half of (4) with reversed sign, and add to *b* ... 22·96
+ 1·5
24·5 (5)

(6) Mercury's anomalistic equation for (5) (p. 202): + 1·9° (6)

(7) Take half of (6), with reversed sign, and add to (5) ... 24·5
− 0·9
23·6 (7)

(8) Anomalistic equation of (7) (p. 202): + 1·8 (8)

(9) Take (8), with reversed sign, and add to *a* ... 185·3
− 1·8
183·5 (9)

(10) Annual equation of (9) (p. 202): − 2·0 (10)

(11) Add (8) and (10): +1·8° − 2·0° = − 0·2 (11)

(12) Add *v* and (11): 197·48° − 0·2° = 197·3° (12)

This last result **197·3°** is the true **geocentric place of Mercury** for the moment in question.

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* The apses and nodes of planets, except the moon, have such slow motions that their places need not be calculated for odd years and days.

289. II. To find the *latitude* of Mercury (*i.e.*, his distance above or below the ecliptic for the same moment.)

(13) Mercury's mean longitude ... 22·78°

minus Longitude of Mercury's node (p. 201): −20·72

2·06° (13)

(14) Take (8) above, with sign reversed, and add to (13): − 1·8

0·3° (14)

(15) Sine of (14) according to Table XVII-F (p. 209) ... 18 (15)

(16) Equation corresponding to (9) *supra*, by Table XVII-E.

Equation for 183·75° = 2173.

" " ·2° = ·05 × 5 = ·25.

∴ Equation for 183·5° = 2173 *minus* ·25 = 2172·75 ... 2173 (16)

(17) Multiply (15) by 120, as a constant for Mercury, and divide the product by (16)

$$\frac{120 \times 18}{2173} = \frac{2160}{2173} = \cdot 9.$$

Now by Table XVII-F, 225 is the sine of 3·75°

$$\therefore \quad \cdot 9 \text{ is the sine of } \frac{3 \cdot 75 \times \cdot 9}{225} = \frac{3 \cdot 375}{225} = \cdot 015°.$$

N.B.—The corresponding constants for the other planets are the sines of their greatest apparent latitudes, given at foot of Table XVII-E.

The latitude of Mercury is ·015° and inasmuch as (14) is less than 180°, *i.e.*, above the ecliptic, the latitude ·015° is North.

MARS (Superior Planet).

290. I. *To find the Geocentric Longitude of Mars (Superior Planet) for 202.54 days in Solar Year A.D. 961-62.*

Time and English date. 9 ghatikas after sunrise on 11th October A.D. 961.

(1) A. Mean longitude of Sun *minus* Mars' mean longitude.

Mean longitude of Sun (already found) 197·48° or 197·48° + 360° = 557·48°

Mean longitude of Mars

For A.D. 900,	79·49°	(Table XVII, p. 200.) See also p. (104) *supra*.
" 61 years,	155·72°	
" 202 days,	105·85°	
" ·54 day,	·28°	
	341·34°	

−341·34°

216·14° A

(2) B. Long. of Mars' Apsis *minus* mean long. of Mars.

Long. of Mars' Apsis [*vide* foot-note on p. (106)] (p. 200) 130·04° or	490·04°	
Mean longitude of Mars	− 341·34°	
	148·70°	B
(3) N. Mean longitude of Mars	341·34°	N
(4) Mars' annual equation for A (p. 200)	− 39·0°	(4)
(5) Take half of (4) with reversed sign, and add to B ...	148·70°	
	+ 19·5	
	168·2°	(5)
(6) Mars' anomalistic equation for (5) (p. 201)	+ 2·4°	(6)
(7) Take half of (6), with reversed sign, and add to (5) ...	168·2°	
	− 1·2°	
	167·0°	(7)
(8) Anomalistic equation of (7) (p. 201)	+ 2·7	(8)
(9) Take (8) with reversed sign, and add to A	216·14°	
	—2·7	
	213·4°	(9)
(10) Annual equation of (9) (p. 200)	− 38·0°	(10)
(11) Add (8) and (10) : + 2·7° − 38·0°	− 35·3°	(11)
(12) Add N and (11) : 341·34° − 35·3°	306·0°	(12)

The true **Geocentric Longitude** of Mars at the moment in question was **306·0°**

291. II. To find the latitude of Mars, *i.e.*, his distance above or below the Ecliptic for the same moment.

(13) Mars' true geocentric longitude	306·0°	
minus Longitude of Mars' node for A.D. 900, (Tab. XVII, p. 200) [*vide* foot-note on p. (106).]	− 40·07	
	265·93°	(13)
(14) Take (10) above for Mars, with sign reversed, and add to (13):	+ 38·0	
	303·9°	(14)
(15) Sine of (14) according to Table XVII-F	2267	(15)
(16) Equation for (9) above, by Table XVII-E	2011	(16)

(17) Multiply (15) by 90, as a constant for Mars, and divide by (16)

$$\frac{90 \times 2267}{2011} = \frac{2040·30}{2011} = 101.$$

N.B.—The corresponding constants for the other planets are the sines of their greatest apparent latitudes, given at foot of Table XVII-E.

Now by Table XVII-F the sine 101 belongs to an angle between 0° and 3·75°
225 is the sine of 3·75°

$$\therefore 101 \quad " \quad \frac{101 \times 3{\cdot}75}{225} = 1{\cdot}68^\circ$$

∴ The **latitude** of Mars sought is **1·7**° which is South since (14) is above 180°.

292. *To find the longitude and latitude of the moon for the above moment.*

We should first of all find the moon's true longitude which we may calculate either from the tithi direct, with the aid of Table XVII-A and XVII-C (as we did in Sec. **287**), or from the Nakshatra. We shall follow the latter method, although the former is easier.

The last New moon before our date (11 Oct. A.D. 961) was that on September 12·74 (Table X, p. 73). This was Âśvina New moon. The tithi for our date is that corresponding to the interval between Oct. 11·02 and Sep. 12·74, or between 41·02 and 12·74, *i.e*, 28·28 days. This, by Eye-Table, is less than the interval for 29 tithis, which is 28·55 days.

As our Nakshatra must fall on the same day as the Tithi, we must take a Nakshatra in the lunar month of Âśvina, whose interval, after correction, shall be near 28·55 days.

The Nakshatra correction for A.D. 961 is (by Tab. XI) that for 26·47 days, *i.e.*, 1·95 (correction for 26 days) + ·03 (correction for ·47 day) = 1·98, and 2·855 + 1·98 = 30·53. This is 1 day more than a lunar month and an interval of 30·53 days from Âśvina New moon takes us to 1 day from Kârttika New moon. The nearest interval to this in Table XI is 1·0757 days under Kârttika (col. VII), for which the Nakshatra is No. 14 *Chitrâ.*

The interval for No. 14 Chitrâ is 1·0757 days from Kârttika New moon,
i.e., 1·08 + 2953 or 30·61 days from Âśvina New moon.
Deduct correction for A.D. 961 —1·98

Actual interval of No. 14 Nakshatra is 28·63 days from Âśvina New moon.

∴ Time of mean ending moment of No. 14 Nakshatra was Sep. 12·74 + 28·63
= Sep. 41·37 = Oct. 11·37.

The ☾'s anomaly for the ending moment of the Nakshatra: 7·09 (Anomaly of First New moon in solar year A.D. 961, *vide* Tab. X, p. 72) + 9·88 (addition for ☾'s Anom. at Âśvina New moon: Table X, head line) + 28·63 (actual interval from Âśvina New moon to No. 14 Nakshatra) = 45·60 days, from which deduct 1 anom. month, 27·55. Remainder, 18·05 days.

The Nakshatra eqn. for 18·05 days is + ·333 (Table IX-*k*). Nak. No. 14 Chitrâ ended therefore on Oct. 11·37 + ·33 = Oct. 11·70 or 42 ghaṭikas after sunrise (Eye-Table). The moment for which we want the moon's true place is earlier than this by ·55 day, which (by Table XVII-D) corresponds to 7·33 degrees of moon's longitude. (See, however, *N.B.* to Section **287**.)

At the ending moment of No. 14 Nak. the **moon's longitude** is 186·7° (Eye-Table); the true place of moon at the moment now in question (9 ghaṭikas. after sunrise on 11 Oct. A.D. 169) was, therefore, 186·7° − **7**·3° = **179·4**°.

293. *Now to find the Moon's latitude at the moment sought.*

(1) Find the place of Moon's node, *i.e.*, Rahu.

By Table XVII-B place of Rahu for A.D. 900 is ... 147·65

By same table Rahu's motion for 61 years, 100·52°

N.B.—Remember that Rahu's mean motion for odd years and days should be subtracted from the mean place for century—*vide* Sec. **295** (4).	200 days,	10·60°	
	·54 day,	·03	
	61 yrs. 200·54 days	=111·13	—111·13°
			36·52° (1)

(2) Moon's true place *minus* place of her node ... ... 179·4°

−36·5

142·9 (2)

(3) Sine of (2) by Table XVII-F 2094 (3)

(4) Multiply (3) by $\frac{270}{3438}$, as a constant for the moon: $\frac{2094 \times 270}{3438} = 164.$

By Table XVII-F, 225 is the sine of 3·75°

$\therefore$ 164 " $\frac{164 \times 3{\cdot}75}{225} = 2{\cdot}73°$

Inasmuch as (2) is less than 180°, the **latitude** sought is **2·73°** North.

294. The reader should note—

(*a*) that for Venus the procedure is the same as for Mercury;

(*b*) that for Jupiter and Saturn, the procedure is the same as for Mars;

(*c*) that for Mercury and Venus, the geocentric longitude has for its basis the Sun's mean longitude and not that of the planet; whereas the geocentric places of Mars, Jupiter and Saturn are based on their respective mean longitudes;

(*d*) that we may always subtract a larger number of degrees from a smaller by adding 360° to the smaller number, as we did for (1) *a* on p. (106), for (1) A on p. (107) and for (2) B on p. (108);

(*e*) that the apsis of any planet except the moon does not change materially in position during a century, and that therefore we need not calculate the change of apsis for odd years or odd days; [*vide* foot note on p. (106)].

(*f*) that after calculating *a*, *b* and *v*, and A, B and N, respectively, the procedure is the same for all planets, whether inferior or superior;

(*g*) that the mean longitudes of planets for decimals of a day may be obtained from the longitude for odd days by prefixing decimals to the latter. Only we should remember that a mean revolution of Mercury is completed in 87 days and a mean revolution of Venus in 225 days, [*vide* Sec. **276**] and the increase of Mercury's longitude for ·89 day is not 0·422°, but 3·6422°. Similarly, the increase of Venus' longitude for ·231 day is not ·01009°, but ·37009°;

(*h*) that the latitudes of planets are not referred to in Indian usage except in what is known as a planetary fight in astrology ;

(*i*) that the greatest apparent latitudes of the several planets and their corresponding Hindu sines are given at foot of Table XVII-E.

295. In using Table XVIII, *Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain Sunrise for every ten days from A. D. 1840 to A. D. 1920*, the reader will do well to bear in mind the following instructions:—

(1) Table XVIII is intended to be of use in constructing or verifying the horoscopes of persons now living or to be born in the next nine years.

(2) The elements of a horoscope are the *râsi* positions of laghna, Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn, Rahu and Ketu.

(3) Of these, the positions of Sun,* Mars, Mercury, Jupiter, Venus and Saturn are given in Table XVIII.

(4) The *laghna* may be ascertained with the aid of the rules given in sections **71** to **76** *supra*. The position of Rahu for any day of the solar year may be ascertained from Table XVII-B. In using this table remember that the signs of Rahu are counted backwards and therefore the longitude of Rahu for odd years and days should be deducted from its longitude for centuries in order to arrive at its position at any moment. *Ketu* is always 180° from Rahu. It does not matter whether for Ketu we add or subtract 180° from Rahu's place: the result will always be the same.

(5) The position of the moon should be determined from her Nakshatra. It would have been no use to have given the position of the moon for every ten days of the year in Table XVIII, since her position shifts by 13° every day and is liable to considerable perturbations on account of her anomaly. Numerous examples are given in the text, showing how the moon's longitude may be ascertained either from the Tithi direct or from the ending momemt of the Nakshatra. [See especially Sections **287** and **292**.]

(6) For planets other than Moon, Rahu and Ketu, Table XVIII gives precise information for every ten days, beginning each year with what is called 0 day of the solar year. The 0 day of the solar year is the day on which the solar year commences, as shown in Table X, not as shown in Table XII (Ephemeris). The English date shown in Table X in the 4th column headed " Month and day A.D. ", is the 0 day of each solar year. For example, the 0 day of the solar year A.D. 1911-12 is April 13.

(7) English dates corresponding to days of the solar year are given most exactly in Table XVIII and not merely by approximation. The Tamil dates shown in the head-lines of Table XVIII are approximate: the exact Tamil date corresponding to any English date can be easily ascertained from Table XII.

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* To the mean longitude of the Sun given in the second head-line of Table XVIII should be added the equation given in the third head-line, and the correction for ⊙'s long. given under each particular year. See example in Sec. **286**.

(8) For dates *between* every 10th day which is shown in Table XVIII, take proportional parts.

Thus, position of Mercury on 23 May 1910 is 44·1°
Do. do. do. 2 June 1910 is 36·6°

Difference for 10 days = 7·5°

∴ Difference for 6 days = $\frac{6}{10} \times 7{\cdot}5 = 4{\cdot}55°$

∴ Position of Mercury at Ujjain sunrise on 29 May 1910 is 44·1°—4·5° = 39·6°.

N.B.—Except in A.D. 1905, A.D. 1909 and A.D. 1913, the actual places of Mercury from A.D. 1886 to A.D. 1919 are practically identical with those for A.D. 1840 to 1873. In other words, Mercury's actual places follow in general a cycle of 46 years. Compare Sec. **228** regarding the moon's cycle of 46 years.

(9) The interval between the 360th day of each solar year and the 0 day of next solar year is either 5 or 6 days according as the former Indian solar year is one of 365 or 366 days. To ascertain this point, refer to Table X: if the fraction of day at which a year commences increases beyond unity in the next year, the year with the former fraction is one of 366 days; where there is no increase of fraction, the length of the year in integral days is 365.

Thus, fraction of day for commencement of A.D. 1909-10 is ·9492
Do. do. do. 1910-11 is ·2080
Do. do. do. 1911-12 is ·4667

We infer that A.D. 1909-10 (Indian Solar Year) is a year of 366 days and that A.D. 1910-11 and A.D. 1911-12 are years of 365 days each. Of course an Indian Solar Year with 366 days will not, except by chance, correspond with an English leap year.

The difference in the longitude of any planet between the 360th day of one solar year and 0 day of the next solar year should be divided by 5 or 6 (according as the year is one of 365 or 366 days) in order to get the difference of longitude for *one day* during that interval, and the difference for one day should be multiplied by as many days as we want.

(10) Two English dates are marked in Table XVIII (just as in Table VIII, *vide* Sec. **215**), when there is a possibility of a year with Feb. 29 alternating with a year in which February has only 28 days. Thus under 330th day on p. 225, " March 6, 7 " is entered, which means that if before reaching either of these dates we have passed "February 29", March 6 is the equivalent of the 330th day of the Solar Year, otherwise March 7 is the 330th day.

(11) The positions marked in Table XVIII are all for Ujjain sunrise and any given moment for which we wish to verify or construct a horoscope should first be reduced to Ujjain time by adding or deducting the total correction for the place, day of the solar year and latitude shown in Table XIII or Table XIII-A. Of course the reader will remember that corrections shown in Table XIII are intended to enable him to obtain local time *from Ujjain time*, and that to obtain Ujjain time *from local time*, the signs of the corrections must be reversed.

(12) It is assumed that the reader knows the ordinary facts about the apparent motions of planets, *i.e.*, they are occasionally stationary or nearly so, and often in retrogression; that any planet is in conjunction with another whose longitude is the same; and in opposition when the distance between the longitudes or the two planets is 180°.

(13) The houses or signs in which the planets are situated according to Table XVII show only *occupation* (in the language of astrology). *Ownership* or *lordship* of houses by planets is purely an astrological convention and has nothing to do with astronomy.

(14) The entries at foot of Table XVIII show the limits or *ending* points of signs or *râsis* and *nakshatras*, while the Eye-Table gives the longitude at *commencement* of each Râśi or Nakshatra. Both sets of entries will be found very useful, and examples of their use are given throughout this work : see for example Sections **49, 186, 266, 287** ; foot-note to p. (45) of the text, etc.

(15) In order to keep the present work within its proper limits, it has been considered essential that the information furnished by it shall be such as will be directly useful for chronological investigation. That it may serve indirectly the purposes of Indian astrology is from the nature of the case, inevitable, but *judicial* astrology, or the interpretation of planetary phenomena for astrological purposes, is entirely beyond the author's scope : and it has been finally decided not to include in this book any criticism of judicial astrology.

Construction of Indian Horoscopes.—Navamsas.

296. Indian usage has, for a long time past, adopted a well-known method of exhibiting the places of planets at particular moments. This is the familiar horoscope, which, relieved of its astrological excrescence, has a scientific value as a chronological record; since a genuine horoscope may, by the exercise of a little ingenuity, be always referred to its date, however remote that date may be, and even though there may not be a single figure indicative of an era or a year. It is for this chronological reason that horoscopes are introduced into this work.

Having ascertained the longitudes of planets and the lagna, which is merely a device for indicating the time of day without the use of figures (see Sections **71** to **76**), we may exhibit them in the form of a horoscope, as shown on the next page. This is a horoscope for the moment already examined, *viz.*, sunrise on 13 April 1911, being 0 day of the Indian Solar Year A.D. 1911-12, Kaliyuga 5012.

297. It might seem at first sight that the first of these tables, which distributes the planets among 12 signs of 30 degrees each, cannot serve the purposes of an accurate chronological record. It is a fact, however, that no other horoscope within perhaps 5000 years will be exactly like this one: and given such a horoscope as this, one may, without further indications, though after some trouble, discover the year; and once the year is discovered, the month, day and hour can be identified in a few minutes.

298. In practice, it is usual for the astrologer or chronologer to frame a more detailed record, and as Indian tradition demands that figures should, as far as practicable, be dispensed with in chronological records, the details of degrees in a horoscope are given by means of a Navâmśa scheme such as that shown on the next page. In the Navâmśa scheme, each sign of 30° is sub-divided into 9 Navâmśas, whence their name, and 12 such Navâmśas constitute a full horoscope. Table XXI compares the Râśis and Navâmśas, and shows [illegible] ow, given a Râśi and the corresponding Navâmśa, the exact position of a planet c[illegible] [illegible]cated within three degrees. For instance, if we know that Śukra is in Râśi **Vrishabha** (II) and Navâmśa **Makara** (X) we can, from the Navâmśa Table XXI, find that Śukra must be between 30° and 33·3°; this is a fairly close approximation to the exact longitude.

Other divisions of the Râśis into *dvâdasâmsas* (12 divisions of 2½ degrees each), *trimsâmsas* (30 divisions of a degree each) and *shashthiamsas* (60 divisions of half a degree each), will be self-evident.

XII **Mina** OR **Pisces.**	I **Mesha** OR **Aries** Lagna Sun or Ravi Mercury or Budha Saturn or Sani Rahu.	II **Vrishabha** OR **Taurus** Venus or Sukra.	III **Mithuna** OR **Gemini.**
XI **Kumbha** OR **Aquarius.**	RASI.		IV **Kataka** OR **Cancer.**
X **Makara** OR **Capricornus** Mars or Kuja.			V **Simha** OR **Leo.**
IX **Dhanus** OR **Sagittarius.**	VIII **Vrischika** OR **Scorpio.**	VII **Tula** OR **Libra** Jupiter or Guru Ketu.	VI **Kanya** OR **Virgo** Moon or Chandra.

XII **Mina** Guru.	I **Mesha** Lagna Ravi.	II **Vrishabha.**	III **Mithuna.**
XI **Kumbha.**	NAVAMSA.		IV **Kataka** Chandra.
X **Makara** Sukra.			V **Simha** Budha Sani.
IX **Dhanus.**	VIII **Vrischika.**	VII **Tula** Rahu.	VI **Kanya** Kuja.

TABLES.

CORRIGENDA.

Text, p. (15), Sec. 32, last line, *for* Thibout, *read* Thibaut.

„ p. (28)—(31) and elsewhere, *for* laghna, *read* lagna.

„ p. (43), Sec. 112 (1). *for* "addendum, p. (114)", *read* "addenda, p. 4 of 'contents'."

„ p. (43), Sec. 112 (5), *Kollam Era. for* "A.D. year *minus* 825", *read* "A.D. year *minus* 824" and increase all the Kollam years shown against century years A D. by 1. Thus K. year 76 began in A.D. 900, K. year 1076 began in A.D. 1900, and so on.

„ p. (80), Sec. 212, *for* the citation **228**, *read* **223**.

TABLE IX, p. 22, line 2, from top *for* 3·777, *read* 13·777.

„	X, p. 30	A.D.	126	☾'s An.	*for*	17·176	*read*	17·186.
„	p. 34	A.D.	210	„	„	3·543	„	3·643.
„	p. 36	A.D.	249	„	„	10·213	„	19·213.
„	p. 38	A.D.	281	„	„	3·623	„	2·620.
„	„	A.D.	310	„	„	1·159	„	21·159.
„	p. 46	A.D.	454	„	„	14·381	„	15·381.
„	p. 52	A.D.	565	„	„	27·727	„	0·172.
„	„	A.D.	566	„	„	23·894	„	23·884.
„	„	A.D.	568	„	„	18·166	„	18·176.
„	p. 56	A.D.	628	„	„	23·985	„	23·995.
„	„	A.D.	649	„	„	14·234	„	14·224.
„	„	A.D.	652	„	„	4·694	„	4·674.
„	p. 60	A.D.	729	„	„	12·159	„	12·139.
„	p. 62	A.D.	773	„	„	12·489	„	12·469.
„	p. 72	A.D.	961	„	„	7·101	„	7·091.
„	p. 76	A.D.	544	„	„	10·277	„	10·287.
„	p. 77	A.D.	731	„	„	6·674	„	6·684.
„	p. 78	A.D.	854	„	„	8·170	„	8·710.
„	„	A.D.	927	„	„	1·985	„	1·977.

„ XI, p. 132, under V Bhadrapada against Yoga No. **5**, *for* 13·9813, *read* 13·9883.

„ XI-A, p. 134, under V Bhadrapada against Yoga No. **5**, *for* 13,58,53 *read* 13,59,18.

„ „ p. 135, under VI Asvina against Yoga No. 16, *for* 20,13,28, *read* 20,14,4.

„ XII, To all the Kollam (Malayalam) years entered in col. 1 of Table XII add 1: thus, the Kollam year which began on 17 August 1911 is not K. 1086 as shown in Table XII, but K. 1087.

„ XVII, p. 200, against Odd Year 34, *for* 27·37, *read* 27·77.

„ „ „ 35 „ 219·81 „ 219·18.

„ p. 201, against Mar's Eqn. **11·0**, *for* 352·2, *read* 252·2.

„ „ p. 203, line 4 from bottom, *for* 439·0, *read* 339·0.

„ „ „ „ line 5 from bottom, *for* 032·6, *read* 332·6.

TABLE I.

Corresponding A.D. years—(Centuries A.D. in heavy type).

(*N.B.*—The Indian year begins in March or April of the A.D. year.)

Names of years in Jupiter's Cycle. (S. India.)																
1 Prabhava ...	**9** 67	**10** 27	**10** 87	**11** 47	**12** 07	**12** 67	**13** 27	**13** 87	**14** 47	**15** 07	**15** 67	**16** 27	**16** 87	**17** 47	**18** 07	**18** 67
2 Vibhava ...	68	28	88	48	08	68	28	88	48	08	68	28	88	48	08	68
3 Sukla ...	69	29	89	49	09	69	29	89	49	09	69	29	89	49	09	69
4 Pramodhuta ...	70	30	90	50	10	70	30	90	50	10	70	30	90	50	10	70
5 Prajapati ...	71	31	91	51	11	71	31	91	51	11	71	31	91	51	11	71
6 Angirasa ...	72	32	92	52	12	72	32	92	52	12	72	32	92	52	12	72
7 Srimukha ...	73	33	93	53	13	73	33	93	53	13	73	33	93	53	13	73
8 Bhava ...	74	34	94	54	14	74	34	94	54	14	74	34	94	54	14	74
9 Yuva ...	75	35	95	55	15	75	35	95	55	15	75	35	95	55	15	75
10 Dhatri ...	76	36	96	56	16	76	36	96	56	16	76	36	96	56	16	76
11 Isvara ...	77	37	97	57	17	77	37	97	57	17	77	37	97	57	17	77
12 Bahudhanya ...	78	38	98	58	18	78	38	98	58	18	78	38	98	58	18	78
13 Pramathi ...	79	39	99	59	19	79	39	99	59	19	79	39	99	59	19	79
14 Vikrama ...	80	40	**11** 00	60	20	80	40	**14** 00	60	20	80	40	**17** 00	60	20	80
15 Vrisha ...	81	41	01	61	21	81	41	01	61	21	81	41	01	61	21	81
16 Chitrabhanu...	82	42	02	62	22	82	42	02	62	22	82	42	02	62	22	82
17 Subhanu ...	83	43	03	63	23	83	43	03	63	23	83	43	03	63	23	83
18 Tarana ...	84	44	04	64	24	84	44	04	64	24	84	44	04	64	24	84
19 Parthiva ...	85	45	05	65	25	85	45	05	65	25	85	45	05	65	25	85
20 Vyaya ...	86	46	06	66	26	86	46	06	66	26	86	46	06	66	26	86
21 Sarvajit ...	87	47	07	67	27	87	47	07	67	27	87	47	07	67	27	87
22 Sarvadhari ...	88	48	08	68	28	88	48	08	68	28	88	48	08	68	28	88
23 Virodhi ...	89	49	09	69	29	89	49	09	69	29	89	49	09	69	29	89
24 Vikrita ...	90	50	10	70	30	90	50	10	70	30	90	50	10	70	30	90
25 Khara ...	91	51	11	71	31	91	51	11	71	31	91	51	11	71	31	91
26 Nandana ...	92	52	12	72	32	92	52	12	72	32	92	52	12	72	32	92
27 Vijaya ...	93	53	13	73	33	93	53	13	73	33	93	53	13	73	33	93
28 Jaya ...	94	54	14	74	34	94	54	14	74	34	94	54	14	74	34	94
29 Manmatha ...	95	55	15	75	35	95	55	15	75	35	95	55	15	75	35	95
30 Durmukha ...	96	56	16	76	36	96	56	16	76	36	96	56	16	76	36	96
31 Hemalamba ...	97	57	17	77	37	97	57	17	77	37	97	57	17	77	37	97
32 Vilamba ...	98	58	18	78	38	98	58	18	78	38	98	58	18	78	38	98
33 Vikari ...	99	59	19	79	39	99	59	19	79	39	99	59	19	79	39	99
34 Sarvari ...	**10** 00	60	20	80	40	**13** 00	60	20	80	40	**16** 00	60	20	80	40	**19** 00
35 Plava ...	01	61	21	81	41	01	61	21	81	41	01	61	21	81	41	01
36 Subhakrit ...	02	62	22	82	42	02	62	22	82	42	02	62	22	82	42	02
37 Sobhana (Sobhakrit) ...	03	63	23	83	43	03	63	23	83	43	03	63	23	83	43	03
38 Krodhi ...	04	64	24	84	44	04	64	24	84	44	04	64	24	84	44	04
39 Visvavasu ...	05	65	25	85	45	05	65	25	85	45	05	65	25	85	45	05
40 Parabhava ...	06	66	26	86	46	06	66	26	86	46	06	66	26	86	46	06
41 Plavanga ...	07	67	27	87	47	07	67	27	87	47	07	67	27	87	47	07
42 Kilaka ...	08	68	28	88	48	08	68	28	88	48	08	68	28	88	48	08
43 Saumya ...	09	69	29	89	49	09	69	29	89	49	09	69	29	89	49	09
44 Sadharana ...	10	70	30	90	50	10	70	30	90	50	10	70	30	90	50	10
45 Virodhakrit ...	11	71	31	91	51	11	71	31	91	51	11	71	31	91	51	11
46 Paridhavi ...	12	72	32	92	52	12	72	32	92	52	12	72	32	92	52	12
47 Pramadicha ...	13	73	33	93	53	13	73	33	93	53	13	73	33	93	53	13
48 Ananda ...	14	74	34	94	54	14	74	34	94	54	14	74	34	94	54	14
49 Rakshasa ...	15	75	35	95	55	15	75	35	95	55	15	75	35	95	55	15
50 Anala (Nala)...	16	76	36	96	56	16	76	36	96	56	16	76	36	96	56	16
51 Pingala ...	17	77	37	97	57	17	77	37	97	57	17	77	37	97	57	17
52 Kalayukta ...	18	78	38	98	58	18	78	38	98	58	18	78	38	98	58	18
53 Siddharthi ...	19	79	39	99	59	19	79	39	99	59	19	79	39	99	59	19
54 Raudra ...	20	80	40	**12** 00	60	20	80	40	**15** 00	60	20	80	40	**18** 00	60	20
55 Durmati ...	21	81	41	01	61	21	81	41	01	61	21	81	41	01	61	21
56 Dundubhi ...	22	82	42	02	62	22	82	42	02	62	22	82	42	02	62	22
57 Rudhirodgari...	23	83	43	03	63	23	83	43	03	63	23	83	43	03	63	23
58 Raktaksha ...	24	84	44	04	64	24	84	44	04	64	24	84	44	04	64	24
59 Krodhana ...	25	85	45	05	65	25	85	45	05	65	25	85	45	05	65	25
60 Kshaya (Akshaya)	26	86	46	06	66	26	86	46	06	66	26	86	46	06	66	26

TABLE II.

Signs of Zodiac; also names of Malabar Months.	Lunar Months; also Bengal Solar Months.	Tamil Solar Months.	Surya Siddhanta. Number of days in each Solar Month.	Surya Siddhanta. Moment of Sankranti; or No. of days up to beginning of each Solar Month.	Surya Siddhanta. Moment of each New Moon; or No. of days up to beginning of each Lunar Month.	Surya Siddhanta. Increase of ☾'s anomaly up to beginning of each Lunar Month.		No. of days in Anomalistic Months.	Arya Siddhanta. No. of days in each Solar Month.	Arya Siddhanta. Moment of Sankranti; or No. of days up to beginning of each Solar Month.
Mesha (**Mal.** Medam)	Vaisakha	Chittirai	30·93528	...	...	...	1	27·5546	30·92500000	...
Vrishabha (**Mal.** Edavam)	Jyeshta	Vaikasi	31·42028	30·93528	29·53059	1·976	2	55·1092	31·40111111	30·925000
Mithuna	Ashada	Ani	31·64472	62·35555	59·06117	3·952	3	82·6638	31·60722222	62·3261111
Karkata	Sravana	Adi	31·47528	94·00028	88·59176	5·928	4	110·2184	31·46777777	93·9333333
Simha	Bhadrapada	Avani	31·01861	125·47555	118·12235	7·904	5	137·7730	31·03472222	125·4011111
Kanya	Asvina	Purattasi	30·44138	156·49417	147·65293	9·880	6	165·3276	30·45666666	156·4358333
Tula	Kartika	Aippasi	29·89333	186·93555	177·18353	11·856	7	192·8822	29·90333333	186·8925000
Vrischika	Margasîra	Kartikai	29·49027	216·82888	206·71411	13·832	8	220·4368	29·50861111	216·7958333
Dhanus	Pausha	Margali	29·31777	246·31916	236·24470	15·808	9	247·9914	29·35055555	246·3044444
Makara	Magha	Tai	29·44805	275·63694	265·77529	17·784	10	275·5460	29·45666666	275·6550000
Kumbha	Phalguna	Masi	29·82027	305·08499	295·30588	19·760	11	303·1006	29·80833333	305·1116666
Mina	Chaitra	Panguni	30·35348	334·90527	324·83647	21·736	12	330·6552	30·33876157	334·9200000
				365·25875	354·36705	23·712	13	358·2098		365·2586805
					383·89764	25·688				

Limits of Adhika months.

	Before.		Before.		After.	Before.
Vaisakha	1·40469	Bhadrapada	8·84122	...	...	...
Jyeshta	3·29438	Asvina	9·75201	Phalguna	9·77912	10·06880
Ashada	5·40851	Kartika	10·11475	Chaitra	10·06880	10·89170
Sravana	7·35320	...	...	...	...	...

Limits of Kshaya months.

	After.	Before.
Margasira	10·07446	10·11475
Pausha	9·86164	10·07447
Magha	9·77910	9·86164
...	...	...

Tithis.

Duration of Tithis.		Names of Tithis.	Duration of Tithis.		Names of Tithis.	Duration of Tithis.		Names of Tithis.
days.			days.			days.		
0·98435	1	Sukla Pratipada	10·82788	11	Sukla Ekadasi	20·67141	6	Krishna Shashti
1·96870	2	Do. Dvitiya	11·81223	12	Do. Dvadasi	21·65576	7	Do. Saptami
2·95306	3	Do. Tritiya	12·79659	13	Do. Trayodasi	22·64012	8	Do. Ashtami
3·93741	4	Do. Chathurthi	13·78094	14	Do. Chaturdasi	23·62447	9	Do. Navami
4·92176	5	Do. Panchami	14·76529	15	Paurnami	24·60882	10	Do. Dasami
5·90612	6	Do. Shashti	15·74965	1	Krishna Pratama	25·59318	11	Do. Ekadasi
6·89047	7	Do. Saptami	16·73400	2	Do. Dvitiya	26·57753	12	Do. Dvadasi
7·87482	8	Do. Ashtami	17·71835	3	Do. Tritiya	27·56188	13	Do. Trayodasi
8·85918	9	Do. Navami	18·70270	4	Do. Chathurthi	28·54623	14	Do. Chaturdasi
9·84353	10	Do. Dasami	19·68706	5	Do. Panchami	29·53059	15	Amavasya

TABLE III.

Nakshatras.

	Order and names of Nakshatras.	Collective duration of Nakshatras (equal space).	Deities presiding over Nakshatras.	Duration of Nakshatras. (Garga.)	Duration of Nakshatras. (Brahma.)
		days.		days.	days.
1	Asvini	1·01191	Asvin	1·01191	1·0
2	Bharani	2·02383	Yama	1·51787	1·5
3	Krittika (**Tam.** Kiruttigai)	3·03574	Agni	2·52978	2·5
4	Rohini	4·04765	Prajapati	4·04765	4·0
5	Mrigasira (**Tam.** Mirugasiram)	5·05957	Soma	5·05956	5·0
6	Ardhra (**Tam.** Arudra or Tiruvadirai)	6·07148	Rudra	5·56552	5·5
7	Punarvasu	7·08340	Aditi	7·08339	7·0
8	Pushya (**Tam.** Pusam)	8·09531	Brihaspati	8·09531	8·0
9	Aslesha (**Tam.** Ayilyam)	9·10722	Sarpah	8·60126	8·5
10	Magha (**Tam.** Magham)	10·11914	Pitarah	9·61318	9·5
11	Purva Phalguni (**Tam.** Puram)	11·13105	Bhaga	10·62510	10·5
12	Uttara Phalguni (**Tam.** Uttiram)	12·14297	Aryaman	12·14297	12·0
13	Hasta (**Tam.** Hastam)	13·15488	Savitri	13·15488	13·0
14	Chittra (**Tam.** Chittirai)	14·16679	Tvashtri	14·16679	14·0
15	Svati	15·17871	Vayu	14·67275	14·5
16	Visakha (**Tam.** Visakam)	16·19062	Indragni	16·19062	16·0
17	Anuradha (**Tam.** Anusham)	17·20273	Mitra	17·20253	17·0
18	Jyeshta (**Tam.** Kettai)	18·21445	Indra	17·70849	17·5
19	Mula (**Tam.** Mulam)	19·22636	Nirriti	18·72040	18·5
20	Purva Ashada (**Tam.** Puradam)	20·23828	Apah	19·73232	19·5
21	Uttara Ashada (**Tam.** Uttiradam)	21·25019	Visvadeva	21·25019	21·0
			Brahma		21·3217 (Abhijit)
22	Sravana (**Tam.** Tiruvonam)	22·26210	Vishnu	22·26210	22·3217
23	Sravishta or Danishta (**Tam.** Avittam)	23·27402	Vasava	23·27401	23·3217
24	Satabhisaj or Sataraka (**Tam.** Sadayam)	24·28593	Varuna	23·77997	23·8217
25	Purva Bhadrapada (**Tam.** Purattadi)	25·29785	Aja Ekapad	24·79188	24·8217
26	Uttara Bhadrapada (**Tam.** Uttirattadi)	26·30976	Ahi Budhnya	26·30975	26·3217
27	Revati	27·32167	Pushan	27·32167	27·3217

Yogas

	Nakshatras and Yogas in lunation space.		Names of Yogas.	Collective duration of Yogas.
	days.			days.
1	1·09372	1	Vishkamba.	0·94149
2	2·18745	2	Priti ...	1·88298
3	3·28118	3	Ayushmat ...	2·82447
4	4·37490	4	Saubhagya.	3·76596
5	5·46863	5	Sobhana ...	4·70745
6	6·56235	6	Atiganda ...	5·64894
7	7·65608	7	Sukarman ...	6·59043
8	8·74980	8	Dhriti ...	7·53192
9	9·84353	9	Sula ...	8·47341
10	10·93725	10	Ganda ...	9·41489
11	12·03098	11	Vriddhi ...	10·35638
12	13·12470	12	Dhruva ...	11·29787
13	14·21843	13	Vyaghata ...	12·23936
14	15·31216	14	Harshana ...	13·18085
15	16·40588	15	Vajra ...	14·12234
16	17·49961	16	Siddhi ...	15·06383
17	18·59333	17	Vyatipata ...	16·00532
18	19·68706	18	Variyas ...	16·94681
19	20·78078	19	Parigha ...	17·88830
20	21·87451	20	Siva ...	18·82979
21	22·96823	21	Siddha ...	19·77128
22	24·06196	22	Sadhya ...	20·71277
23	25·15569	23	Subha ...	21·65426
24	26·24941	24	Sukla ...	22·59575
25	27·34314	25	Brahman ...	23·53724
26	28·43686	26	Indra ...	24·47873
27	29·53059	27	Vaidhriti ...	25·42022

Karanas.

Karana	Numbers	
Kimstughna	... 1,	58=Sakuni.
Bava	... 2, 9, 16, 23, 30, 37, 44, 51,	59=Naga.
Balava	... 3, 10, 17, 24, 31, 38, 45, 52,	60=Chatushpada.
Kaulava	... 4, 11, 18, 25, 32, 39, 46, 53,	
Taitila	... 5, 12, 19, 26, 33, 40, 47, 54,	
Gara	... 6, 13, 20, 27, 34, 41, 48, 55,	
Banija	... 7, 14, 21, 28, 35, 42, 49, 56,	
Vishti (or Bhadra.)	... 8, 15, 22, 29, 36, 43, 50, 57,	

TABLE IV.

Perpetual Almanac for European Calendar.

Centuries.

		1	**2**	**3**	**4**	**5**	**6**	**7 or 0**	Week-day begin-
B.C.	...	3001	3101	3201					ning from Sun-
		2301	2401	2501	2601	2701	2801	2901	day which is **1**.
		1601	1701	1801	1901	2001	2101	2201	
		901	1001	1101	1201	1301	1401	1501	
		201	301	401	501	601	701	801	
							1	101	
A.D.	...	500	400	300	200	100	0		
Old Style	...	1200	1100	1000	900	800	700	600	
				1700	1600	1500	1400	1300	
A.D.	...	1600	1900		1800		1700		
New Style	...	2000	2300		2200		2100		

Odd Years.

1	**2**	**3**	**4**	**5**	**6**	**7 or 0**	Week-day begin-
1	2	3	...	4	5	6	ning from Sun-
7	...	8	9	10	11	...	day which is **1**.
12	13	14	15	...	16	17	
18	19	...	20	21	22	23	
...	24	25	26	27	...	28	
29	30	31	...	32	33	34	
35	...	36	37	38	39	...	
40	41	42	43	...	44	45	
46	47	...	48	49	50	51	
...	52	53	54	55	...	56	
57	58	59	...	60	61	62	
63	...	64	65	66	67	...	
68	69	70	71	...	72	73	
74	75	...	76	77	78	79	
...	80	81	82	83	...	84	
85	86	87	...	88	89	90	
91	...	92	93	94	95	...	
96	97	98	99	...	...	...	

Months.

	1	**2**	**3**	**4**	**5**	**6**	**7 or 0**	Week-day begin-
Ordinary years.	Aug.	Feb. Mar. Nov.	Jun.	Sep. Dec.	Ap. Jul.	Jan. Oct.	May.	ning from Sun- day which is **1**.
Leap years ...	Feb.	...	...	...	Jan.	...	...	... ...

TABLE V.

Multip. Table for 1/1·0808. Mean time corresponding to Nakshatra-space.

1	0·92520	·34	·31457	·67	·61988
2	1·85040	·35	·32382	·68	·62913
3	2·77560	·36	·33307	·69	·63839
4	3·70080	·37	·34232	·70	·64764
5	4·62599	·38	·35157	·71	·65689
6	5·55119	·39	·36083	·72	·66614
7	6·47639	·40	·37008	·73	·67539
8	7·40159	·41	·37933	·74	·68465
9	8·32679	·42	·38858	·75	·69390
10	9·27199	·43	·39783	·76	·70315
11	10·17719	·44	·40709	·77	·71240
12	11·10239	·45	·41634	·78	·72165
13	12·02759	·46	·42559	·79	·73091
14	12·95279	·47	·43484	·80	·74016
15	13·87799	·48	·44409	·81	·74941
16	14·80318	·49	·45335	·82	·75866
17	15·72838	·50	·46260	·83	·76791
18	16·65358	·51	·47185	·84	·77717
19	17·57878	·52	·48110	·85	·78642
20	18·50398	·53	·49035	·86	·79567
21	19·42918	·54	·49961	·87	·80492
22	20·35438	·55	·50886	·88	·81417
23	21·27958	·56	·51811	·89	·82343
24	22·20478	·57	·52736	·90	·83268
25	23·12998	·58	·53661	·91	·84193
26	24·05518	·59	·54587	·92	·85118
27	24·98037	·60	·55512	·93	·86043
28	25·90557	·61	·56437	·94	·86969
29	26·83077	·62	·57362	·95	·87894
·30	·27756	·63	·58287	·96	·88819
·31	·28681	·64	·59213	·97	·89744
·32	·29606	·65	·60138	·98	·90669
·33	·30531	·66	·61063	·99	·91595

Multip. Table for 1/1·1616. Mean time corresponding to Yoga-space.

1	0·86081	·34	·29267	·67	·57674
2	1·72162	·35	·30128	·68	·58535
3	2·58243	·36	·30989	·69	·59396
4	3·44324	·37	·31850	·70	·60257
5	4·30405	·38	·32711	·71	·61117
6	5·16486	·39	·33572	·72	·61978
7	6·02567	·40	·34432	·73	·62839
8	6·88648	·41	·35293	·74	·63700
9	7·74729	·42	·36154	·75	·64561
10	8·60810	·43	·37015	·76	·65421
11	9·46891	·44	·37876	·77	·66282
12	10·32972	·45	·38736	·78	·67143
13	11·19053	·46	·39597	·79	·68004
14	12·05134	·47	·40458	·80	·68866
15	12·91215	·48	·41319	·81	·69725
16	13·77295	·49	·42180	·82	·70586
17	14·63376	·50	·43040	·83	·71448
18	15·49457	·51	·43901	·84	·72309
19	16·35538	·52	·44762	·85	·73169
20	17·21619	·53	·45623	·86	·74030
21	18·07700	·54	·46484	·87	·74890
22	18·93781	·55	·47344	·88	·75751
23	19·79862	·56	·48205	·89	·76612
24	20·65943	·57	·49066	·90	·77474
25	21·52024	·58	·49927	·91	·78345
26	22·38105	·59	50788	·92	·79193
27	23·24186	·60	·51649	·93	·80055
28	24·10267	·61	·52509	·94	·80916
29	24·96348	·62	·53370	·95	·81777
·30	·25823	·63	·54231	·96	·82638
·31	·26685	·64	·55092	·97	·83498
·32	·27546	·65	·55953	·98	·84359
·33	·28407	·66	·56830	·99	·85220

Sun's Longitude for Nakshatras and Yogas.

·01	·0008085	·34	·0274885	·67	·0541684
·02	·0016170	·35	·0282970	·68	·0549769
·03	·0024254	·36	·0291054	·69	·0557854
·04	·0032339	·37	·0299139	·70	·0565939
·05	·0040424	·38	·0307224	·71	·0574024
·06	·0048509	·39	·0315309	·72	·0582108
·07	·0056594	·40	·0323394	·73	·0590193
·08	·0064679	·41	·0331478	·74	·0598278
·09	·0072764	·42	·0339563	·75	·0606363
·10	·0080848	·43	·0347648	·76	·0614448
·11	·0088933	·44	·0355733	·77	·0622533
·12	·0097018	·45	·0363818	·78	·0630617
13	·0105103	·46	·0371903	·79	·0638702
·14	·0113188	·47	·0379987	·80	·0646787
·15	·0121273	·48	·0388072	·81	·0654872
·16	·0129357	·49	·0396157	·82	·0662957
·17	·0137442	·50	·0404242	·83	·0671042
·18	·0145527	·51	·0412327	·84	·0679127
·19	·0153612	·52	·0420412	·85	·0687211
·20	·0161697	·53	·0428496	·86	·0695296
·21	·0169782	·54	·0436581	·87	·0703381
·22	·0177867	·55	·0444666	·88	·0714066
·23	·0185951	·56	·0452751	·89	·0719551
·24	·0194036	·57	·0460836	·90	·0727636
·25	·0202121	·58	·0468921	·91	·0735720
·26	·0210206	·59	·0477005	·92	·0743805
·27	·0218291	·60	·0485090	·93	·0751890
·28	·0226376	·61	·0493175	·94	·0759975
·29	·0234460	·62	·0501260	·95	·0768060
·30	·0242545	·63	·0509345	·96	·0776145
·31	·0250630	·64	·0517429	·97	·0784229
·32	·0258715	·65	·0525515	·98	·0792314
·33	·0266800	·66	·0533599	·99	·0800399

Multiplication Tables for Jupiter's Samvatsaras.

Jupiter's years in Solar years.		Increase of Jupiter's year for Solar days.
1·0117	1	·00277
2·0234	2	·00554
3·0351	3	·00831
4·0468	4	·01108
5·0585	5	·01385
6·0702	6	·01662
7·0819	7	·01939
8·0936	8	·02216
9·1053	9	·02493
10·1170	10	·02770
11·1287	11	·03047
12·1404	12	·03324
13·1521	13	·03601
14·1638	14	·03878
15·1755	15	·04155
16·1872	16	·04432
17·1989	17	·04709
18·2106	18	·04986
19·2223	19	·05263
20·2340	20	·05540
21·2457	21	·05817
22·2574	22	·06093
23·2691	23	·06371
24·2808	24	·06647
25·2925	25	·06924
26·3042	26	·07201
27·3159	27	·07478
28·3276	28	·07755
29·3393	29	·08032
30·3510	30	·08309
31·3627	31	·08586
32·3744	32	·08863
33·3861	33	·09140
34·3978	34	·09417
35·4095	35	·09694
36·4212	36	·09971
37·4329	37	·10248
38·4446	38	·10525
39·4563	39	·10802
40·4680	40	·11079
41·4797	41	·11356
42·4914	42	·11633
43·5031	43	·11910
44·5148	44	·12187
45·5265	45	·12464
46·5382	46	·12741
47·5499	47	·13018
48·5616	48	·13295
49·5733	49	·13572
50·5850	50	·13849
51·5967	51	·14126
52·6084	52	·14403
53·6201	53	·14680
54·6318	54	·14957
55·6435	55	·15234
56·6552	56	·15520
57·6669	57	·15788
58·6786	58	·16065
59·6903	59	·16342
0·7020	60	·16619
1·7137	61	·16896
2·7254	62	·17173
3·7371	63	·17450
4·7488	64	·17727
5·7605	65	·18004
6·7722	66	·18281
7·7839	67	·18558
8·7956	68	·18835
9·8073	69	·19112
10·8190	70	·19389
11·8307	71	·19666
12·8424	72	·19943
13·8541	73	·20220
14·8658	74	·20497
15·8775	75	·20774
16·8892	76	·21051
17·9009	77	·21328
18·9126	78	·21605
19·9243	79	·21881
20·9360	80	·22158
21·9477	81	·22435
22·9594	82	·22712
23·9711	83	·22989
24·9828	84	·23266
25·9945	85	·23543
27·0062	86	·23820
28·0179	87	·24097
29·0296	88	·24374
30·0413	89	·24651
31·0530	90	·24928
32·0647	91	·25205
33·0764	92	·25482
34·0881	93	·25759
35·0998	94	·26036
36·1115	95	·26313
37·1232	96	·26590
38·1349	97	·26867
39·1466	98	·27144
40·1583	99	·27421

TABLE VI.

Surya Siddhanta Constants for Centuries.

Year A.D.	Kaliyuga.	Commencement of Solar Year. Month and Date.	Commencement of Solar Year. Fraction of day.	First new moon in Solar Year.	☾'s anomaly at commencement of Solar Year.
1 B.C.	3101	13M	·98310	9·99810	12·73835
100 A.D.	3201	14M	·85875	13·45974	1·21454
200	3301	15M	·73440	16·92138	17·24532
300	3401	16M	·61004	20·38302	5·72151
400	3501	17M	·48569	23·84466	21·75228
500	3601	18M	·36134	27·30630	10·22845
600	3701	19M	·23698	1·23735	26·25922
700	3801	20M	·11264	4·69899	14·73539
800	3901	20M	·98828	8·16063	3·21156
900	4001	21M	·86393	11·62227	19·24233
1000	4101	22M	·73958	15·08391	7·71850
1100	4201	23M	·61523	18·54556	23·74927
1200	4301	24M	·49088	22·00720	12·22544
1300	4401	25M	·36652	25·46884	0·70161
1400	4501	26M	·24217	28·93048	16·73238
1500	4601	27M	·11782	2·86153	5·20855
1600	4701	27M	·99347	6·32317	21·35937
1700	4801	28M	·86912	9·78481	9·83810
1800	4901	10Ap	·74477	13·24645	25·87144
1900	5001	12Ap	·62041	16·70809	14·35017

Arya Siddhanta Constants for Centuries.

Year A.D.	Kaliyuga.	Commencement of Solar Year. Month and Date.	Commencement of Solar Year. Fraction of day.	First new moon in Solar Year.	☾'s anomaly at commencement of Solar Year.
1 B.C.	3101	14M	·020832	9·97497	12·44500
100 A.D.	3201	14M	·888887	13·43662	0·91097
200	3301	15M	·756943	16·89826	16·93155
300	3401	16M	·624998	20·35990	5·39752
400	3501	17M	·493054	23·82154	21·41810
500	3601	18M	·361109	27·28318	9·88407
600	3701	19M	·229165	1·22789	25·95007
700	3801	20M	·097220	4·70320	14·46145
800	3901	20M	·965276	8·17851	2·97285
900	4001	21M	·833331	11·65383	19·03883
1000	4101	22M	·701387	15·12914	7·55022
1100	4201	23M	·569442	18·60446	23·61622
1200	4301	24M	·437498	22·07977	12·12760
1300	4401	25M	·305553	25·55508	0·63900
1400	4501	26M	·173609	29·03039	16·70498
1500	4601	27M	·041664	2·97511	5·21637
1600	4701	27M	·909720	6·45043	21·28237
1700	4801	28M	·777775	9·92574	9·79375
1800	4901	10Ap	·645831	13·40105	25·85975
1900	5001	12Ap	·513886	16·87636	14·37114

Subsidiary Table VI (a) Difference between Moon's and Sun's Longitude in days (360° = 29·5305880 days).

Degrees.	Day.
1	·0820294
2	·1640588
3	·2460882
4	·3281176
5	·4101471
6	·4921765
7	·5742059
8	·6562353
9	·7382647
10	·8202941
20	1·6405882
30	2·4608823
40	3·2811764
50	4·1014705
60	4·9217647
70	5·7420588
80	6·5623529
90	7·3826470
100	8·2029411
200	16·4058822
300	24·6088233
360	29·5305880

Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.
1	·0013671	23	·0314447	45	·0615220
2	·0027343	24	·0328118	46	·0628892
3	·0041015	25	·0341789	47	·0642564
4	·0054687	26	·0355461	48	·0656235
5	·0068358	27	·0369132	49	·0669907
6	·0082030	28	·0382804	50	·0683578
7	·0095700	29	·0396475	51	·0697250
8	·0109373	30	·0410147	52	·0710921
9	·0123044	31	·0423819	53	·0724593
10	·0136716	32	·0437490	54	·0738265
11	·0150387	33	·0451162	55	·0751936
12	·0164059	34	·0464833	56	·0765608
13	·0177730	35	·0478505	57	·0779279
14	·0191402	36	·0492176	58	·0792951
15	·0205073	37	·0505848	59	·0806622
16	·0218745	38	·0519520		
17	·0232417	39	·0533191		
18	·0246088	40	·0546863		
19	·0259760	41	·0560534		
20	·0273431	42	·0574206		
21	·0287103	43	·0587877		
22	·0300775	44	·0601549		

Seconds of degree.	Fraction of day.	Seconds of degree.	Fraction of day.	Seconds of degree.	Fraction of day.
1	·0000228	23	·0005241	45	·0010254
2	·0000456	24	·0005469	46	·0010481
3	·0000683	25	·0005696	47	·0010707
4	·0000911	26	·0005924	48	·0010937
5	·0001139	27	·0006152	49	·0011165
6	·0001367	28	·0006380	50	·0011393
7	·0001595	29	·0006608	51	·0011621
8	·0001823	30	·0006836	52	·0011849
9	·0002051	31	·0007064	53	·0012076
10	·0002278	32	·0007291	54	·0012304
11	·0002506	33	·0007519	55	·0012532
12	·0002734	34	·0007747	56	·0012760
13	·0002962	35	·0007975	57	·0012988
14	·0003190	36	·0001203	58	·0013216
15	·0003418	37	·0008434	59	·0013444
16	·0003646	38	·0008659	60	·0013671
17	·0003874	39	·0008886		
18	·0004101	40	·0009114		
19	·0004329	41	·0009342		
20	·0004557	42	·0009570		
21	·0004785	43	·0009798		
22	·0005013	44	·0010026		

TABLE VII.

Surya Siddhanta—Odd years.

	Fraction of day, marking commencement of Solar Year.	First new moon in Solar Year.	☾'s anomaly for beginning of Solar Year.		Fraction of day, marking commencement of Solar Year.	First new moon in Solar Year.	☾'s anomaly for beginning of Solar Year.		Fraction of day, marking commencement of Solar Year.	First new moon in Solar Year.	☾'s anomaly for beginning of Solar Year.
1	·25876	18·63889	7·04896	**38**	·83274	29·07418	19·86899	**75**	1·40673	9·97888	5·13443
2	·51751	7·74719	14·09791	**39**	1·09150	18·18247	26·91795	**76**	·66549	28·61776	12·18339
3	·77627	26·38607	21·14687	**40**	·35026	7·29077	6·41231	**77**	·92424	17·72606	19·23235
4	·03502	15·49437	0·64123	**41**	·60901	25·92966	13·46127	**78**	1·18300	6·83436	26·28130
5	·29378	4·60267	7·69019	**42**	·86777	15·03796	20·51022	**79**	1·44176	25·47325	5·77566
6	·55254	23·24156	14·73915	**43**	1·12652	4·14626	0·00458	**80**	·70051	14·58155	12·82462
7	·81129	12·34986	21·78810	**44**	·38528	22·78515	7·05354	**81**	·95927	3·68985	19·87358
8	·07005	1·45815	1·28246	**45**	·64404	11·89344	14·10250	**82**	1·21802	22·32873	26·92253
9	·32881	20·09704	8·33142	**46**	·90279	1·00174	21·15146	**83**	1·47678	11·43703	6·41689
10	·58756	9·20534	15·38038	**47**	1·16155	19·64063	0·64581	**84**	·73554	0·54533	13·46585
11	·84632	27·84423	22·42933	**48**	·42031	8·74893	7·69477	**85**	·99430	19·18422	20·51481
12	·10508	16·95253	1·92369	**49**	·67906	27·38782	14·74373	**86**	1·25305	8·29252	0·00917
13	·36383	6·06082	8·97265	**50**	·93782	16·49611	21·79269	**87**	1·51181	26·93140	7·05812
14	·62259	24·69971	16·02161	**51**	1·19658	5·60441	1·28704	**88**	·77056	16·03970	14·10708
15	·88135	13·80801	23·07057	**52**	·45533	24·24330	8·33600	**89**	1·02932	5·14800	21·15604
16	·14010	2·91631	2·56492	**53**	·71409	13·35160	15·38496	**90**	1·28808	23·78689	0·65040
17	·39886	21·55520	9·61388	**54**	·97284	2·45990	22·43392	**91**	1·54683	12·89519	7·69935
18	·65761	10·66250	16·66284	**55**	1·23160	21·09878	1·92828	**92**	·80559	2·00349	14·74831
19	·91637	29·30238	23·71180	**56**	·49036	10·20708	8·97723	**93**	1·06434	20·64237	21·79727
20	·17513	18·41068	3·20615	**57**	·74911	28·84597	16·02619	**94**	1·32310	9·75067	1·29163
21	·43388	7·51898	10·25511	**58**	1·00787	17·95420	23·07515	**95**	1·58186	28·38956	8·34059
22	·69264	26·15787	17·30407	**59**	1·26663	7·06257	2·56951	**96**	·84061	17·49786	15·38954
23	·95140	15·26616	24·35303	**60**	·52538	25·70146	9·61846	**97**	1·09937	6·60616	22·43850
24	·21015	4·37446	3·84739	**61**	·78414	14·80976	16·66742	**98**	1·35813	25·24504	1·93286
25	·46891	23·01335	10·89634	**62**	1·04290	3·91805	23·71638	**99**	1·61688	14·35334	8·98182
26	·72767	12·12165	17·94530	**63**	1·30165	22·55694	3·21074	**100**	·87565	3·46164	16·03078
27	·98642	1·22995	24·99426	**64**	·56041	11·66524	10·25970	**200**	·75130	6·92328	4·50696
28	·24518	19·86884	4·48862	**65**	·81917	0·77354	17·30865	**300**	·62694	10·38492	20·53775
29	·50393	8·97713	11·53757	**66**	1·07792	19·41242	24·35761	**400**	·50259	13·84657	9·01393
30	·76269	27·61602	18·58653	**67**	1·33668	8·52073	3·85197	**500**	·37824	17·30821	25·04471
31	1·02145	16·72432	25·63549	**68**	·59543	27·15961	10·90093	**600**	·25389	20·76985	13·52089
32	·28020	5·83262	5·12985	**69**	·85419	16·26791	17·94988	**700**	·12954	24·23149	1·99708
33	·53896	24·47151	12·17881	**70**	1·11295	5·37621	24·99884	**800**	·00519	27·69312	18·02786
34	·79772	13·57981	19·22776	**71**	1·37170	24·01509	4·49320	**900**	·88084	1·62418	6·50404
35	1·05647	2·68810	26·27672	**72**	·63046	13·12339	11·54216	**1000**	·75648	5·08582	22·53482
36	·31523	21·32699	5·77108	**73**	·88922	2·23169	18·59112	**2000**	·51297	10·17164	17·51504
37	·57399	10·43529	12·82004	**74**	1·14797	20·87058	25·64007	**3000**	·26945	15·25746	12·49527

SUBSIDIARY TABLE VII (a)

Moon's Anomaly in days (360° = 27·5545999 days).

Degrees.	Days.	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.	Seconds of degree.	Fraction of day.	Seconds of degree.	Fraction of day.	Seconds of degree.	Fraction of day.
1	·0765405	**1**	·0012757	**23**	·0293405	**45**	·0574054	**1**	·0000215	**23**	·0004890	**45**	·0009568
2	·1530811	**2**	·0025513	**24**	·0306162	**46**	·0586811	**2**	·0000425	**24**	·0005103	**46**	·0009780
3	·2296217	**3**	·0038270	**25**	·0318919	**47**	·0599568	**3**	·0000638	**25**	·0005315	**47**	·0009993
4	·3061622	**4**	·0051027	**26**	·0331676	**48**	·0612324	**4**	·0000850	**26**	·0005528	**48**	·0010205
5	·3827028	**5**	·0063784	**27**	·0344432	**49**	·0625081	**5**	·0001063	**27**	·0005740	**49**	·0010418
6	·4592433	**6**	·0076540	**28**	·0357189	**50**	·0637838	**6**	·0001276	**28**	·0005953	**50**	·0010631
7	·5357839	**7**	·0089297	**29**	·0369946	**51**	·0650595	**7**	·0001488	**29**	·0006166	**51**	·0010843
8	·6123244	**8**	·0102054	**30**	·0382703	**52**	·0663351	**8**	·0001701	**30**	·0006378	**52**	·0011056
9	·6888650	**9**	·0114811	**31**	·0395459	**53**	·0676108	**9**	·0001913	**31**	·000659	**53**	·0011268
10	·7654055	**10**	·0127568	**32**	·0408216	**54**	·0688865	**10**	·0002126	**32**	·0006804	**54**	·0011481
20	1·5308111	**11**	·0140324	**33**	·0420973	**55**	·0701622	**11**	·0002339	**33**	·0007016	**55**	·0011694
30	2·2962166	**12**	·0153081	**34**	·0433730	**56**	·0714878	**12**	·0002551	**34**	·0007229	**56**	·0011906
40	3·0616222	**13**	·0165838	**35**	·0446486	**57**	·0727135	**13**	·0002764	**35**	·0007441	**57**	·0012119
50	3·8270277	**14**	·0178595	**36**	·0459243	**58**	·0739892	**14**	·0002977	**36**	·0007654	**58**	·3012331
60	4·5924333	**15**	·0191351	**37**	·0472000	**59**	·0752649	**15**	·0003189	**37**	·0007867	**59**	·0012544
70	5·3578388	**16**	·0204108	**38**	·0484757	**60**	·0765405	**16**	·0003402	**38**	·0008079	**60**	·0012757
80	6·1232444	**17**	·0216865	**39**	·0497514			**17**	·0003614	**39**	·0008292		
90	6·8886499	**18**	·0229622	**40**	·0510270			**18**	·0003827	**40**	·0008504		
100	7·6540555	**19**	·0242378	**41**	·0523027			**19**	·0004040	**41**	·0008717		
200	15·3081110	**20**	·0255135	**42**	·0535784			**20**	·0004252	**42**	·0008930		
300	22·9621665	**21**	·0267892	**43**	·0548541			**21**	·0004465	**43**	·0009142		
360	27·5545999	**22**	·0280649	**44**	·0561297			**22**	·0004677	**44**	·0009355		

TABLE VII—*contd.*

Arya Siddhanta—Odd years.

	Fraction of day, marking commencement of Solar Year.	First new moon in Solar Year.	☾'s anomaly for beginning of Solar Year.		Fraction of day, marking commencement of Solar Year.	First new moon in Solar Year.	☾'s anomaly for beginning of Solar Year.		Fraction of day, marking commencement of Solar Year.	First new moon in Solar Year.	☾'s anomaly for beginning of Solar Year.
1	·25868	18·63903	7·04931	**38**	·82986	29·07937	19·88238	**75**	1·40104	9·98913	5·16084
2	·51736	7·74745	14·09862	**39**	1·08854	18·18780	26·93169	**76**	·65972	28·62815	12·21015
3	·77604	26·38648	21·14793	**40**	·34722	7·29624	6·42640	**77**	·91840	17·73659	19·25946
4	·03472	15·49492	0·64264	**41**	·60590	25·93526	13·47571	**78**	1·17708	6·84502	26·30877
5	·29340	4·60335	7·69195	**42**	·86458	15·04370	20·52502	**79**	1·43576	25·48405	5·80348
6	·55208	23·24238	14·74126	**43**	1·12326	4·15214	0·01973	**80**	·69444	14·59249	12·85279
7	·81076	12·35082	21·79057	**44**	·38194	22·79116	7·06904	**81**	·95312	3·70092	19·90210
8	·06944	1·45924	1·28528	**45**	·64062	11·89959	14·11835	**82**	1·21180	22·33994	26·95141
9	·32812	20·09827	8·33459	**46**	.89930	1·00803	21·16766	**83**	1·47048	11·44838	6·44612
10	·58680	9·20671	15·38390	**47**	1·15799	19·64705	0·66237	**84**	·72917	0·55681	13·49543
11	·84549	27·84573	22·43321	**48**	·41667	8·75549	7·71168	**85**	·98785	19·19584	20·54474
12	·10417	16·95417	1·92792	**49**	·67535	27·39452	14·76099	**86**	1·24653	8·30428	0·03945
13	·36285	6·06260	8·97723	**50**	·93403	16·50294	21·81030	**87**	1·50521	26·94329	7·08876
14	·62153	24·70162	16·02654	**51**	1·19271	5·61138	1·30500	**88**	·76389	16·05173	14·13807
15	·88021	13·81006	23·07585	**52**	·45139	24·25041	8·35432	**89**	1·02257	5·16017	21·18738
16	·13889	2·91850	2·57056	**53**	·71007	13·35884	15·40363	**90**	1·28125	23·79919	0·68209
17	·39757	21·55752	9·61987	**54**	·96875	2·46728	22·45294	**91**	1·53993	2·90763	7·73140
18	·65625	10·66596	16·66918	**55**	1·22743	21·10630	1·94764	**92**	·79861	2·01607	14·78071
19	·91493	29·30498	23·71849	**56**	·48611	10·21474	8·99695	**93**	1·05729	20·65508	21·83002
20	·17361	18·41341	3·21320	**57**	·74479	28·85376	16·04627	**94**	1·31597	9·76352	1·32474
21	·43229	7·52185	10·26251	**58**	1·00347	17·96219	23·09558	**95**	1·57465	28·40254	8·37405
22	·69097	26·16088	17·31182	**59**	1·26215	7·07063	2·59028	**96**	·83333	17·51098	15·42336
23	·94965	15·26930	24·36113	**60**	·52083	25·70966	9·63959	**97**	1·09201	6·61942	22·47267
24	·20833	4·37774	3·85584	**61**	·77951	14·81810	16·68890	**98**	1·35069	25·25844	1·96738
25	·46701	23·01677	10·90515	**62**	1·03819	3·92653	23·73822	**99**	1·60937	14·36687	9·01668
26	·72569	12·12520	17·95446	**63**	1·29687	22·56555	3·23292	**100**	·86805	3·47531	16·06600
27	·98437	1·23364	25·00377	**64**	·55555	11·67399	10·28223	**200**	·73611	6·95062	4·57738
28	·24305	19·87267	4·49848	**65**	·81423	0·78243	17·33154	**300**	·60417	10·42593	20·64332
29	·50174	8·98109	11·54779	**66**	1·07292	19·42144	24·38086	**400**	·47222	13·90124	9·15466
30	·76042	27·62012	18·59710	**67**	1·33160	8·52989	3·87556	**500**	·34028	17·37655	25·22064
31	1·01910	16·72856	25·64641	**68**	·59028	27·16891	10·92488	**600**	·20833	20·85186	13·73203
32	·27778	5·83699	5·14112	**69**	·84896	16·27734	17·97419	**700**	·07639	24·32717	2·24342
33	·53646	24·47602	12·19043	**70**	1·10764	5·38578	25·02350	**800**	·94444	27·80248	18·30941
34	·79514	13·58446	19·23974	**71**	1·36632	24·02480	4·51820	**900**	·81250	1·74720	6·82080
35	1·05382	2·69288	26·28905	**72**	·62500	13·13323	11·56751	**1000**	·68055	5·22251	22·88679
36	·31250	21·33191	5·78376	**73**	·88368	2·24167	18·61682	**2000**	·36111	10·44502	18·21898
37	·57118	10·44035	12·83307	**74**	1·14236	20·88070	25·66613	**3000**	·04166	15·66753	13·55117

SUBSIDIARY TABLE VII (b)

Sun's Longitude in days (360° = 365·258756484 days).

Degrees.	Days.	Degrees.	Days	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.	Minutes of degree.	Fraction of day.
1	1·0146076	**40**	40·5843064	**1**	·0169101	**13**	·2198316	**25**	·4227532	**37**	·6256747	**49**	·8285962
2	2·0292153	**50**	50·7303830	**2**	·0338202	**14**	·2367418	**26**	·4396633	**38**	·6425848	**50**	·8455063
3	3·0438230	**60**	60·8764596	**3**	·0507304	**15**	·2536519	**27**	·4565734	**39**	·6594949	**51**	·8624165
4	4·0584306	**70**	71·0225362	**4**	·0676405	**16**	·2705620	**28**	·4734835	**40**	·6764051	**52**	·8793266
5	5·0730383	**80**	81·1686128	**5**	·0845506	**17**	·2874722	**29**	·4903937	**41**	·6933152	**53**	·8962367
6	6·0876460	**90**	91·3146894	**6**	·1014608	**18**	·3043823	**30**	·5073038	**42**	·7102253	**54**	·9131468
7	7·1022536	**100**	101·4607660	**7**	·1183709	**19**	·3212924	**31**	·5242139	**43**	·7271355	**55**	·9300570
8	8·1168613	**200**	202·9215320	**8**	·1352810	**20**	·3382025	**32**	·5411241	**44**	·7440456	**56**	·9469671
9	9·1314689	**300**	304·3822980	**9**	·1521911	**21**	·3551127	**33**	·5580342	**45**	·7609557	**57**	·9638772
10	10·1460766	**360**	365·2587565	**10**	·1691013	**22**	·3720228	**34**	·5749443	**46**	·7778658	**58**	·9807874
20	20·2921532			**11**	·1860114	**23**	·3889329	**35**	·5918544	**47**	·7947760	**59**	·9976975
30	30·4382298			**12**	·2029215	**24**	·4058430	**36**	·6087646	**48**	·8116861	**60**	1·0146076

TABLE VIII.

CALENDAR FOR ASCERTAINING THE A.D. MONTH AND DAY CORRESPONDING TO ANY SOLAR DATE, LUNAR TITHI, NAKSHATRA, YOGA OR KARANA.

[N.B.—The Solar days and Fractions of days, Tithis and ending moments of Tithis, and Moon's Anomaly should be added to the elements given in Tables VI and VII for Centuries and odd years. See the Text for instructions on this subject.]

Week-day.	* Days reckoned from Jan. 1	Mar. 1	Apr. 1	Day of Solar Month.	Day of Solar Year.	Ending moment of Tithi.	Tithi No.	☾'s An. for each Tithi.	☉'s Long. for Nakshatras and Yogas.
		Chittirai.			**Vaisakha.**				
		(Mal.) Medam.							
	Jan.	Mar.	Apr.	(Beng.) Vaisakha.					
				0	**0**	·9843	1	0·984	...
1	1	1	**1**	1	**1**	·9687	2	1·969	29·4150
2	2	2	**2**	2	**2**	·9530	3	2·953	29·4959
3	3	3	**3**	3	**3**	·9374	4	3·937	·0670
4	4	4	**4**	4	**4**	·9217	5	4·921	·1479
5	5	5	**5**	5	**5**	·9061	6	5·906	·2287
6	6	6	**6**	6	**6**	·8904	7	6·890	·3096
7	7	7	**7**	7	**7**	·8748	8	7·875	·3904
1	8	8	**8**	8	**8**	·8592	9	8·859	·4713
2	9	9	**9**	9	**9**	·8435	10	9·843	·5521
3	10	10	**10**	10	**10**	·8279	11	10·827	·6330
4	11	11	**11**	11	**11**	·8122	12	11·812	·7138
5	12	12	**12**	12	**12**	·7966	13	12·797	·7947
6	13	13	**13**	13	**13**	·7809	14	13·781	·8755
7	14	14	**14**	14	**14**	·7652	15	14·765	·9564
1	15	15	**15**	15	**15**	·7496	**1**	15·750	1·0372
2	16	16	**16**	16	**16**	·7340	**2**	16·734	1·1181
3	17	17	**17**	17	**17**	·7183	**3**	17·718	1·1989
4	18	18	**18**	18	**18**	·7027	**4**	18·703	1·2798
5	19	19	**19**	19	**19**	·6870	**5**	19·687	1·3606
6	20	20	**20**	20	**20**	·6714	**6**	20·671	1·4415
7	21	21	**21**	21	**21**	·6557	**7**	21·656	1·5223
1	22	22	**22**	22	**22**	·6401	**8**	22·640	1·6032
2	23	23	**23**	23	**23**	·6244	**9**	23·624	1·6840
3	24	24	**24**	24	**24**	·6088	**10**	24·609	1·7649
4	25	25	**25**	25	**25**	·5932	**11**	25·593	1·8457
5	26	26	**26**	26	**26**	·5775	**12**	26·577	1·9266
6	27	27	**27**	27	**27**	·5619	**13**	0·007	2·0074
7	28	28	**28**	28	**28**	·5462	**14**	0·992	2·0882
1	29	29	**29**	29	**29**	·5306	**15**	1·976	2·1691
					Jyeshta.				
2	30	30	**30**	30	**30**	·5149	1	2·960	2·2499
Sankranti.	S. Sid. 30·9353 days.								
	A. Sid. 30·9250 days.								
			Vaikasi.						
			(Mal.) Edavam.						
	Jan.	Mar.	May.	(Beng.) Jyeshta.		*Jyeshta (Lunar).*			
3	31	31	**1**	1	**31**	·4993	2	3·945	2·3308
	Feb.	Apr.							
4	1	1	**2**	2	**32**	·4836	3	4·929	2·4116
5	2	2	**3**	3	**33**	·4680	4	5·913	2·4925
6	3	3	**4**	4	**34**	·4523	5	6·898	2·5733
7	4	4	**5**	5	**35**	·4367	6	7·882	2·6542
1	5	5	**6**	6	**36**	·4210	7	8·866	2·7350
2	6	6	**7**	7	**37**	·4054	8	9·851	2·8159
3	7	7	**8**	8	**38**	·3898	9	10·835	2·8967
4	8	8	**9**	9	**39**	·3741	10	11·819	2·9776
5	9	9	**10**	10	**40**	·3585	11	12·804	3·0584
6	10	10	**11**	11	**41**	·3428	12	13·788	3·1393
7	11	11	**12**	12	**42**	·3272	13	14·773	3·2201

Week-day.	* Days reckoned from Jan. 1	Mar. 1	Apr. 1	Day of Solar Month.	Day of Solar Year.	Ending moment of Tithi.	Tithi No.	☾'s An. for each Tithi.	☉'s Long. for Nakshatras and Yogas.
	Feb.	Apr.	May.	Vai.		*Jyeshta (Lunar).*			
1	12	12	**13**	13	**43**	·3115	14	15·757	3·3010
2	13	13	**14**	14	**44**	·2959	15	16·741	3·3818
3	14	14	**15**	15	**45**	·2802	**1**	17·726	3·4627
4	15	15	**16**	16	**46**	·2646	**2**	18·710	3·5435
5	16	16	**17**	17	**47**	·2489	**3**	19·694	3·6244
6	17	17	**18**	18	**48**	·2333	**4**	20·679	3·7052
7	18	18	**19**	19	**49**	·2176	**5**	21·663	3·7861
1	19	19	**20**	20	**50**	·2020	**6**	22·647	3·8669
2	20	20	**21**	21	**51**	·1863	**7**	23·632	3·9478
3	21	21	**22**	22	**52**	·1707	**8**	24·616	4·0286
4	22	22	**23**	23	**53**	·1551	**9**	25·600	4·1095
5	23	23	**24**	24	**54**	·1394	**10**	26·585	4·1903
6	24	24	**25**	25	**55**	·1238	**11**	0·015	4·2712
7	25	25	**26**	26	**56**	·1081	**12**	0·999	4·3520
1	26	26	**27**	27	**57**	·0925	**13**	1·983	4·4329
2	27	27	**28**	28	**58**	·0768	**14**	2·968	4·5137
3	28	28	**29**	29	**59**	·0612	**15**	3·952	4·5945
							Ashada.		
4	29, 1	29	**30**	30	**60**	·0455	1	4·936	4·6754
	Mar.								
5	1, 2	30	**31**	31	**61**	·0299	2	5·921	4·7562
		May.	June.						
6	2, 3	1	**1**	31	**62**	·0142	3	6·905	4·8371
...	...	...	...	...	**62**	·9986	4	7·889	...
Sankranti.	Day of month.			S. Sid. 31·4203			A. Sid. 31·4011		
	„ year.			„ 62·3555			„ 62·3261		
				Ani.					
				(Mal.) Mithunam.					
	Mar.	May.	June.	(Beng.) Ashada.		*Ashada (Lunar).*			
7	3, 4	2	**2**	1	**63**	·9829	5	8·874	4·9179
1	4, 5	3	**3**	2	**64**	·9673	6	9·858	4·9988
2	5, 6	4	**4**	3	**65**	·9516	7	10·842	5·0796
3	6, 7	5	**5**	4	**66**	·9360	8	11·827	5·1605
4	7, 8	6	**6**	5	**67**	·9203	9	12·811	5·2413
5	8, 9	7	**7**	6	**68**	·9047	10	13·795	5·3222
6	9,10	8	**8**	7	**69**	·8891	11	14·780	5·4030
7	10,11	9	**9**	8	**70**	·8734	12	15·764	5·4839
1	11,12	10	**10**	9	**71**	·8578	13	16·749	5·5647
2	12,13	11	**11**	10	**72**	·8421	14	17·733	5·6456
3	13,14	12	**12**	11	**73**	·8265	15	18·717	5·7264
4	14,15	13	**13**	12	**74**	·8108	**1**	19·702	5·8073
5	15,16	14	**14**	13	**75**	·7952	**2**	20·686	5·8881
6	16,17	15	**15**	14	**76**	·7795	**3**	21·670	5·9690
7	17,18	16	**16**	15	**77**	·7639	**4**	22·655	6·0498
1	18,19	17	**17**	16	**78**	·7482	**5**	23·639	6·1307
2	19,20	18	**18**	17	**79**	·7326	**6**	24·623	6·2115
3	20,21	19	**19**	18	**80**	·7169	**7**	25·608	6·2924
4	21,22	20	**20**	19	**81**	·7013	**8**	26·592	6·3732
5	22,23	21	**21**	20	**82**	·6856	**9**	0·022	6·4541
6	23,24	22	**22**	21	**83**	·6700	**10**	1·006	6·5349
7	24,25	23	**23**	22	**84**	·6543	**11**	1·991	6·6158
1	25,26	24	**24**	23	**85**	·6387	**12**	2·975	6·6965
2	26,27	25	**25**	24	**86**	·6231	**13**	3·959	6·7775
3	27,28	26	**26**	25	**87**	·6074	**14**	4·944	6·8583
4	28,29	27	**27**	26	**88**	·5918	**15**	5·928	6·9392

*** When two dates are given in any of these columns, use the first in a leap year ; otherwise use the second.**

TABLE VIII.

Week-day.	* Days reckoned from Jan. 1	Mar. 1	Apr. 1	Day of Solar Month.	Day of Solar Year.	Ending moment of Tithi.	Tithi No.	☾'s An. for each Tithi.	⊙'s Long. for Nakshatras and Yogas.
	Mar.	May.	June.	Ani.		**Sravana.**			
5	29,30	28	28	27	89	·5761	1	6·912	7·0200
6	30,31	29	29	28	90	·5605	2	7·897	7·1008
7	31, 1	30	30	29	91	·5448	3	8·881	7·1817
	Apr.		July.						
1	1, 2	31	1	30	92	·5292	4	9·865	7·2625
		June.							
2	2, 3	1	2	31	93	·5135	5	10·850	7·3434
3	3, 4	2	3	31	94	·4979	6	11·834	7·4242
Sankranti.	Day of month.			S. Sid.	31·6447		A. Sid.	31·6072	
	" year.			"	94·0003		"	93·9333	
				Adi.					
				(Mal.) Karkatagam.					
	Apr.	June.	Jul.	(Beng.) Sravana.		*Sravana (Lunar).*			
4	4, 5	3	4	1	95	·4822	7	12·818	7·5051
5	5, 6	4	5	2	96	·4666	8	13·803	7·5859
6	6, 7	5	6	3	97	·4509	9	14·787	7·6668
7	7, 8	6	7	4	98	·4353	10	15·771	7·7476
1	8, 9	7	8	5	99	·4196	11	16·756	7·8285
2	9,10	8	9	6	100	·4040	12	17·740	7·9093
3	10,11	9	10	7	101	·3883	13	18·725	7·9902
4	11,12	10	11	8	102	·3727	14	19·709	8·0710
5	12,13	11	12	9	103	·3571	15	20·693	8·1518
6	13,14	12	13	10	104	·3414	1	21·678	8·2327
7	14,15	13	14	11	105	·3258	2	22·662	8·3136
1	15,16	14	15	12	106	·3101	3	23·646	8·3944
2	16,17	15	16	13	107	·2945	4	24·631	8·4753
3	17,18	16	17	14	108	·2788	5	25·615	8·5561
4	18,19	17	18	15	109	·2632	6	26·599	8·6370
5	19,20	18	19	16	110	·2475	7	0·029	8·7178
6	20,21	19	20	17	111	·2319	8	1·013	8·7987
7	21,22	20	21	18	112	·2162	9	1·998	8·8795
1	22,23	21	22	19	113	·2006	10	2·982	8·9604
2	23,24	22	23	20	114	·1849	11	3·966	9·0412
3	24,25	23	24	21	115	·1693	12	4·951	9·1221
4	25,26	24	25	22	116	·1536	13	5·935	9·2029
5	26,27	25	26	23	117	·1380	14	6·920	9·2838
6	27,28	26	27	24	118	·1223	15	7·904	9·3646
						Bhadrapada.			
7	28,29	27	28	25	119	·1067	1	8·888	9·4455
1	29,30	28	29	26	120	·0911	2	9·873	9·5263
2	30,31	29	30	27	121	·0754	3	10·857	9·6071
	May.								
3	1, 2	30	31	28	122	·0598	4	11·841	9·6880
		Jul.	Aug.						
4	2, 3	1	1	29	123	·0441	5	12·826	9·7688
5	3, 4	2	2	30	124	·0285	6	13·810	9·8497
6	4, 5	3	3	31	125	·0128	7	14·794	9·9305
...	...	...	...	31	125	·9972	8	15·779	...
Sankranti.	Day of month.			S. Sid.	31·4753		A. Sid.	31·4677	
	" year.			"	125·4755		"	125·4011	
				Avani.		*Bhadrapada (Lunar).*			
				(Mal.) Chingam.					
	May.	Jul.	Aug.	(Beng.) Bhadrapada.					
7	5, 6	4	4	1	126	·9815	9	16·763	10·0114
1	6, 7	5	5	2	127	·9659	10	17·747	10·0922
2	7, 8	6	6	3	128	·9502	11	18·732	10·1731
3	8, 9	7	7	4	129	·9346	12	19·716	10·2539
4	9,10	8	8	5	130	·9189	13	20·700	10·3348
5	10,11	9	9	6	131	·9033	14	21·685	10·4156
6	11,12	10	10	7	132	·8876	15	22·669	10·4965
7	12,13	11	11	8	133	·8720	1	23·654	10·5773
	May.	Jul.	Aug.	Avani.		*Bhadrapada (Lunar).*			
1	13,14	12	12	9	134	·8563	2	24·638	10·6582
2	14,15	13	13	10	135	·8407	3	25·622	10·7390
3	15,16	14	14	11	136	·8251	4	26·607	10·8199
4	16,17	15	15	12	137	·8094	5	0·036	10·9007
5	17,18	16	16	13	138	·7938	6	1·021	10·9816
6	18,19	17	17	14	139	·7781	7	2·005	11·0624
7	19,20	18	18	15	140	·7625	8	2·989	11·1433
1	20,21	19	19	16	141	·7468	9	3·974	11·2241
2	21,22	20	20	17	142	·7312	10	4·958	11·3050
3	22,23	21	21	18	143	·7155	11	5·942	11·3858
4	23,24	22	22	19	144	·6999	12	6·927	11·4667
5	24,25	23	23	20	145	·6842	13	7·911	11·5475
6	25,26	24	24	21	146	·6686	14	8·896	11·6284
7	26,27	25	25	22	147	·6529	15	9·880	11·7092
						Asvina.			
1	27,28	26	26	23	148	·6373	1	10·864	11·7908
2	28,29	27	27	24	149	·6216	2	11·849	11·8706
3	29,30	28	28	25	150	·6060	3	12·833	11·9515
4	30,31	29	29	26	151	·5904	4	13·817	12·0321
5	31, 1	30	30	27	152	·5747	5	14·802	12·1130
	June.								
6	1, 2	31	31	28	153	·5591	6	15·786	12·1943
		Aug.	Sep.						
7	2, 3	1	1	29	154	·5434	7	16·770	12·2759
1	3, 4	2	2	30	155	·5278	8	17·755	12·3568
2	4, 5	3	3	31	156	·5121	9	18·739	12·4367
Sankranti.	Day of month.			S. Sid.	31·0186		A. Sid.	31·0347	
	" year.			"	156·4942		"	156·4358	
				Purattasi.					
				(Mal.) Kanni.					
	June.	Aug.	Sep.	(Beng.) Asvina.		*Asvina (Lunar).*			
3	5, 6	4	4	1	157	·4965	10	19·723	12·5177
4	6, 7	5	5	2	158	·4808	11	20·708	12·5986
5	7, 8	6	6	3	159	·4652	12	21·692	12·6794
6	8, 9	7	7	4	160	·4495	13	22·676	12·7602
7	9,10	8	8	5	161	·4339	14	23·661	12·8411
1	10,11	9	9	6	162	·4182	15	24·645	12·9219
2	11,12	10	10	7	163	·4026	1	25·630	13·0028
3	12,13	11	11	8	164	·3869	2	26·614	13·0836
4	13,14	12	12	9	165	·3713	3	0·044	13·1645
5	14,15	13	13	10	166	·3556	4	1·028	13·2453
6	15,16	14	14	11	167	·3400	5	2·012	13·3262
7	16,17	15	15	12	168	·3244	6	2·997	13·4070
1	17,18	16	16	13	169	·3087	7	3·981	13·4879
2	18,19	17	17	14	170	·2931	8	4·965	13·5687
3	19,20	18	18	15	171	·2774	9	5·950	13·6496
4	20,21	19	19	16	172	·2618	10	6·934	13·7304
5	21,22	20	20	17	173	·2461	11	7·918	13·8113
6	22,23	21	21	18	174	·2305	12	8·903	13·8921
7	23,24	22	22	19	175	·2148	13	9·887	13·9730
1	24,25	23	23	20	176	·1992	14	10·872	14·0531
2	25,26	24	24	21	177	·1835	15	11·856	14·1347
						Kartika.			
3	26,27	25	25	22	178	·1679	1	12·840	14·2155
4	27,28	26	26	23	179	·1522	2	13·825	14·2964
5	28,29	27	27	24	180	·1366	3	14·809	14·3772
6	29,30	28	28	25	181	·1209	4	15·793	14·4581
7	30, 1	29	29	26	182	·1053	5	16·778	14·5389
	July.								
1	1, 2	30	30	27	183	·0896	6	17·762	14·6198
			Oct.						
2	2, 3	31	1	28	184	·0740	7	18·746	14·7006
		Sep.							
3	3, 4	1	2	29	185	·0584	8	19·731	14·7814
4	4, 5	2	3	30	186	·0427	9	20·715	14·8623

* When two dates are given in any of these columns, use the first in a leap year ; otherwise use the second.

TABLE VIII.

Week-day.	Days reckoned from* Jan. 1	Mar. 1	Apr. 1	Day of Solar Month.	Day of Solar Year.	Ending moment of Tithi.	Tithi.	☾'s An. for each Tithi.	⊙'s Long. for Nakshatras and Yogas.
Sankranti.	Day of month.			S. Sid.	30·4414		A. Sid.	30·4567	
	„ year.			„	186·9355		„	186·8925	
	Aippasi.								
				(Mal.) Tulam.					
	Jul.	Sep.	Oct.	(Beng.)	Kartika.		*Kartika* (*Lunar*).		
5	5, 6	3	**4**	1	**187**	·0271	10	21·699	14·9431
6	6, 7	4	**5**	2	**188**	·0114	11	22·684	15·0040
...	...	...	...	...	**188**	·9958	12	23·668	...
7	7, 8	5	**6**	3	**189**	·9801	13	24·652	15·1248
1	8, 9	6	**7**	4	**190**	·9645	14	25·637	15·1857
2	9,10	7	**8**	5	**191**	·9488	15	26·621	15·2665
3	10,11	8	**9**	6	**192**	·9332	**1**	0·051	15·3474
4	11,12	9	**10**	7	**193**	·9175	**2**	1·035	15·4282
5	12,13	10	**11**	8	**194**	·9019	**3**	2·020	15·5090
6	13,14	11	**12**	9	**195**	·8862	**4**	3·004	15·5899
7	14,15	12	**13**	10	**196**	·8706	**5**	3·988	15·6708
1	15,16	13	**14**	11	**197**	·8549	**6**	4·973	15·7516
2	16,17	14	**15**	12	**198**	·8393	**7**	5·957	15·8325
3	17,18	15	**16**	13	**199**	·8236	**8**	6·941	15·9133
4	18,19	16	**17**	14	**200**	·8080	**9**	7·926	15·9942
5	19,20	17	**18**	15	**201**	·7924	**10**	8·910	16·0750
6	20,21	18	**19**	16	**202**	·7767	**11**	9·894	16·1559
7	21,22	19	**20**	17	**203**	·7611	**12**	10·879	16·2367
1	22,23	20	**21**	18	**204**	·7454	**13**	11·863	16·3176
2	23,24	21	**22**	19	**205**	·7298	**14**	12·848	16·3984
3	24,25	22	**23**	20	**206**	·7141	**15**	13·832	16·4793
							Margasira.		
4	25,26	23	**24**	21	**207**	·6985	1	14·816	16·5601
5	26,27	24	**25**	22	**208**	·6828	2	15·801	16·6410
6	27,28	25	**26**	23	**209**	·6672	3	16·785	16·7218
7	28,29	26	**27**	24	**210**	·6515	4	17·769	16·8026
1	29,30	27	**28**	25	**211**	·6359	5	18·754	16·8835
2	30,31	28	**29**	26	**212**	·6202	6	19·738	16·9644
3	31, 1	29	**30**	27	**213**	·6046	7	20·722	17·0452
	Aug.								
4	1, 2	30	**31**	28	**214**	·5889	8	21·707	17·1261
		Oct.	Nov.						
5	2, 3	1	**1**	29	**215**	·5733	9	22·691	17·2069
6	3, 4	2	**2**	29	**216**	·5576	10	23·675	17·2877
Sankranti.	Day of month.			S.Sid.	29·8933		A.Sid.	29·9033	
	„ year.			„	216·8289		„	216·7958	
	Kartikai.								
				(Mal.) Vrischikam.					
	Aug.	Oct.	Nov.	(Beng.)	Margasira.		*Margasira* (*Lunar*).		
7	4, 5	3	**3**	1	**217**	·5420	11	24·660	17·3686
1	5, 6	4	**4**	2	**218**	·5264	12	25·644	17·4494
2	6, 7	5	**5**	3	**219**	·5107	13	26·628	17·5303
3	7, 8	6	**6**	4	**220**	·4951	14	0·058	17·6111
4	8, 9	7	**7**	5	**221**	·4794	15	1·043	17·6900
5	9,10	8	**8**	6	**222**	·4638	**1**	2·027	17·7728
6	10,11	9	**9**	7	**223**	·4481	**2**	3·011	17·8537
7	11,12	10	**10**	8	**224**	·4325	**3**	3·996	17·9345
1	12 13	11	**11**	9	**225**	·4168	**4**	4·980	18·0154
2	13,14	12	**12**	10	**226**	·4012	**5**	5·964	18·0962
3	14,15	13	**13**	11	**227**	·3855	**6**	6·949	18·1771
4	15,16	14	**14**	12	**228**	·3699	**7**	7·933	18·2579
5	16,17	15	**15**	13	**229**	·3542	**8**	8·917	18·3388
6	17,18	16	**16**	14	**230**	·3386	**9**	9·902	18·4196
7	18,19	17	**17**	15	**231**	·3229	**10**	10·886	18·5005
1	19,20	18	**18**	16	**232**	·3073	**11**	11·870	18·5813
2	20,21	19	**19**	17	**233**	·2916	**12**	12·855	18·6622
3	21,22	20	**20**	18	**234**	·2760	**13**	13·839	18·7430
4	22,23	21	**21**	19	**235**	·2604	**14**	14·824	18·8239
5	23,24	22	**22**	20	**236**	·2447	**15**	15·808	18·9047
	Aug.	Oct.	Nov.	Kartikai.			**Pausha.**		
6	24,25	23	**23**	21	**237**	·2291	1	16·792	18·9856
7	25,26	24	**24**	22	**238**	·2134	2	17·777	19·0664
1	26,27	25	**25**	23	**239**	·1978	3	18·761	19·1473
2	27,28	26	**26**	24	**240**	·1821	4	19·745	19·2281
3	28,29	27	**27**	25	**241**	·1665	5	20·730	19·3090
4	29,30	28	**28**	26	**242**	·1508	6	21·714	19·3898
5	30,31	29	**29**	27	**243**	·1352	7	22·698	19·4707
6	31, 1	30	**30**	28	**244**	·1195	8	23·683	19·5515
	Sep.		Dec.						
7	1, 2	31	**1**	29	**245**	·1039	9	24·667	19·6324
		Nov.							
1	2, 3	1	**2**	30	**246**	·0882	10	25·651	19·7132
Sankranti.	Day of month.			S. Sid.	29·4903		A. Sid.	29·5086	
	„ year.			„	246·3192		„	246·3044	
	Margali.								
				(Mal.) Dhanus.					
	Sep.	Nov.	Dec.	(Beng.)	Pausha.		*Pausha* (*Lunar*).		
2	3, 4	2	**3**	1	**247**	·0726	11	26·636	19·7941
3	4, 5	3	**4**	2	**248**	·0569	12	0·065	19·8749
4	5, 6	4	**5**	3	**249**	·0413	13	1·050	19·9557
5	6, 7	5	**6**	4	**250**	·0257	14	2·034	20·0366
6	7, 8	6	**7**	5	**251**	·0108	15	3·019	20·1174
...	...	...	...	...	**251**	·9944	**1**	4·003	...
7	8, 9	7	**8**	6	**252**	·9787	**2**	4·987	20·1983
1	9,10	8	**9**	7	**253**	·9631	**3**	5·972	20·2791
2	10,11	9	**10**	8	**254**	·9474	**4**	6·956	20·3600
3	11,12	10	**11**	9	**255**	·9318	**5**	7·940	20·4408
4	12,13	11	**12**	10	**256**	·9161	**6**	8·925	20·5217
5	13,14	12	**13**	11	**257**	·9005	**7**	9·909	20·6025
6	14,15	13	**14**	12	**258**	·8848	**8**	10·893	20·6834
7	15,16	14	**15**	13	**259**	·8692	**9**	11·878	20·7642
1	16,17	15	**16**	14	**260**	·8535	**10**	12·862	20·8451
2	17,18	16	**17**	15	**261**	·8379	**11**	13·846	20·9259
3	18,19	17	**18**	16	**262**	·8222	**12**	14·831	21·0068
4	19,20	18	**19**	17	**263**	·8066	**13**	15·815	21·0876
5	20,21	19	**20**	18	**264**	·7909	**14**	16·799	21·1685
6	21,22	20	**21**	19	**265**	·7753	**15**	17·784	21·2493
							Magha		
7	22,23	21	**22**	20	**266**	·7597	1	18·768	21·3302
1	23,24	22	**23**	21	**267**	·7440	2	19·753	21·4110
2	24,25	23	**24**	22	**268**	·7284	3	20·737	21·4919
3	25,26	24	**25**	23	**269**	·7127	4	21·721	21·5727
4	26,27	25	**26**	24	**270**	·6971	5	22·706	21·6536
5	27,28	26	**27**	25	**271**	·6814	6	23·690	21·7344
6	28,29	27	**28**	26	**272**	·6658	7	24·674	21·8153
7	29,30	28	**29**	27	**273**	·6501	8	25·659	21·8961
1	30, 1	29	**30**	28	**274**	·6345	9	26·643	21·9770
	Oct.								
2	1, 2	30	**31**	29	**275**	·6188	10	0·073	22·0578
Sankranti.	Day of month.			S. Sid.	29·3178		A. Sid.	29·3505	
	„ year.			„	275·6369		„	275·6550	
	Tai.								
				(Mal.) Magaram.					
	Oct.	Dec.	Jan.	(Beng.)	Magha.		*Magha* (*Lunar*).		
3	2, 3	1	**1**	1	**276**	·6032	11	1·057	22·1387
4	3, 4	2	**2**	2	**277**	·5875	12	2·041	22·2195
5	4, 5	3	**3**	3	**278**	·5719	13	3·026	22·3004
6	5, 6	4	**4**	4	**279**	·5562	14	4·010	22·3810
7	6, 7	5	**5**	5	**280**	·5406	15	4·995	22·4621

* When two dates are given in any of these columns, use the first in a leap year ; otherwise use the second.

TABLE VIII.

Week-day.	Days reckoned from* Jan. 1	Mar. 1	Apr. 1	Day of Solar Month.	Day of Solar Year.	Ending moment of Tithi.	Tithi.	☾'s An. for each Tithi.	⊙'s Long. for Nakshatras and Yogas.
	Oct.	Dec.	Jan.	Tai.			*Magha (Lunar).*		
1	7, 8	6	**6**	6	**281**	·5249	**1**	5·979	22·5429
2	8, 9	7	**7**	7	**282**	·5093	**2**	6·963	22·6237
3	9,10	8	**8**	8	**283**	·4937	**3**	7·948	22·7046
4	10,11	9	**9**	9	**284**	·4780	**4**	8·932	22·7854
5	11,12	10	**10**	10	**285**	·4624	**5**	9·916	22·8663
6	12,13	11	**11**	11	**286**	·4467	**6**	10·901	22·9471
7	13,14	12	**12**	12	**287**	·4311	**7**	11·885	23·0280
1	14,15	13	**13**	13	**288**	·4154	**8**	12·869	23·1088
2	15,16	14	**14**	14	**289**	·3998	**9**	13·854	23·1897
3	16,17	15	**15**	15	**290**	·3841	**10**	14·838	23·2705
4	17,18	16	**16**	16	**291**	·3685	**11**	15·822	23·3514
5	18,19	17	**17**	17	**292**	·3528	**12**	16·807	23·4322
6	19,20	18	**18**	18	**293**	·3372	**13**	17·791	23·5131
7	20,21	19	**19**	19	**294**	·3215	**14**	18·775	23·5939
1	21,22	20	**20**	20	**295**	·3059	**15**	19·760	23·6748
							Phalguna.		
2	22,23	21	**21**	21	**296**	·2902	1	20·744	23·7556
3	23,24	22	**22**	22	**297**	·2746	2	21·729	23·8364
4	24,25	23	**23**	23	**298**	·2589	3	22·713	23·9173
5	25,26	24	**24**	24	**299**	·2433	4	23·697	23·9982
6	26,27	25	**25**	25	**300**	·2277	5	24·682	24·0790
7	27,28	26	**26**	26	**301**	·2120	6	25·666	24·1599
1	28,29	27	**27**	27	**302**	·1964	7	26·650	24·2407
2	29,30	28	**28**	28	**303**	·1807	8	0·080	24·3216
3	30,31	29	**29**	29	**304**	·1651	9	1·064	24·4024
4	31, 1	30	**30**	29	**305**	·1494	10	2·049	24·4833
Sankranti.	Day of month.				S. Sid. 29·4480		A. Sid. 29·4567		
	„ year.				„ 305·0850		„ 305·1117		
					Masi.				
				(Mal.) Kumbam.					
	Nov.	Dec.	Jan.	(Beng)	Phalguna.		*Phalguna (Lunar).*		
5	1, 2	31	**31**	1	**306**	·1338	11	3·033	24·5641
		Jan.	Feb.						
C	2, 3	1	**1**	2	**307**	·1181	12	4·017	24·6450
7	3, 4	2	**2**	3	**308**	·1025	13	5·002	24·7258
1	4, 5	3	**3**	4	**309**	·0868	14	5·986	24·8067
2	5, 6	4	**4**	5	**310**	·0712	15	6·971	24·8875
3	6, 7	5	**5**	6	**311**	·0555	**1**	7·955	24·9683
4	7, 8	6	**6**	7	**312**	·0399	**2**	8·939	25·0492
5	8, 9	7	**7**	8	**313**	·0242	**3**	9·924	25·1300
6	9,10	8	**8**	9	**314**	·0086	**4**	10·908	25·2109
...	...	...	...	...	**314**	·9929	**5**	11·892	...
7	10,11	9	**9**	10	**315**	·9773	**6**	12·877	25·2917
1	11,12	10	**10**	11	**316**	·9617	**7**	13·861	25·3726
2	12,13	11	**11**	12	**317**	·9460	**8**	14·845	25·4534
3	13,14	12	**12**	13	**318**	·9304	**9**	15·830	25·5343
4	14,15	13	**13**	14	**319**	·9147	**10**	16·814	25·6151
5	15,16	14	**14**	15	**320**	·8991	**11**	17·798	25·6960
6	16,17	15	**15**	16	**321**	·8834	**12**	18·783	25·7768
7	17,18	16	**16**	17	**322**	·8678	**13**	19·767	25·8577
1	18,19	17	**17**	18	**323**	·8521	**14**	20·751	25·9385
2	19,20	18	**18**	19	**324**	·8365	**15**	21·736	26·0194
							Chaitra (when there is no Adhika masa).		
3	20,21	19	**19**	20	**325**	·8208	1	22·720	26·1002
4	21,22	20	**20**	21	**326**	·8052	2	23·705	26·1811
5	22,23	21	**21**	22	**327**	·7895	3	24·689	26·2619
6	23,24	22	**22**	23	**328**	·7739	4	25·673	26·3428
7	24,25	23	**23**	24	**329**	·7582	5	26·658	26·4236
1	25,26	24	**24**	25	**330**	·7426	6	0·087	26·5045
2	26,27	25	**25**	26	**331**	·7269	7	1·072	26·5853
3	27,28	26	**26**	27	**332**	·7113	8	2·056	26·6662
4	28,29	27	**27**	28	**333**	·6957	9	3·040	26·7470
5	29,30	28	**28**	29	**334**	·6800	10	4·025	26·8279

Week-day.	Days reckoned from* Jan. 1	Mar. 1	Apr. 1	Day of Solar Month.	Day of Solar Year.	Ending moment of Tithi.	Tithi.	☾'s An. for each Tithi.	⊙'s Long. for Nakshatras and Yogas.
Sankranti.	Day of month.				S. Sid. 29·8203		A. Sid. 29·8083		
	„ year.				„ 334·9053		„ 334·9200		
					Panguni.				
				(Mal.)	Meenam.				
	Nov.	Jan.	Feb.	(Beng.)	Chaitra.		*Chaitra (Lunar).*		
6	30, 1	29	**29, 1**	1	**335**	·6644	11	5·009	26·9087
	Dec.		Mar.						
7	1, 2	30	**1, 2**	2	**336**	·6487	12	5·993	26·9896
1	2, 3	31	**2, 3**	3	**337**	·6331	13	6·978	27·0704
		Feb.							
2	3, 4	1	**3, 4**	4	**338**	·6174	14	7·962	27·1513
3	4, 5	2	**4, 5**	5	**339**	·6018	15	8·947	27·2321
4	5, 6	3	**5, 6**	6	**340**	·5861	**1**	9·931	27·3130
5	6, 7	4	**6, 7**	7	**341**	·5705	**2**	10·915	27·3938
6	7, 8	5	**7, 8**	8	**342**	·5548	**3**	11·900	27·4746
7	8, 9	6	**8, 9**	9	**343**	·5392	**4**	12·884	27·5555
1	9,10	7	**9,10**	10	**344**	·5235	**5**	13·868	27·6363
2	10,11	8	**10,11**	11	**345**	·5079	**6**	14·853	27·7172
3	11,12	9	**11,12**	12	**346**	·4922	**7**	15·837	27·7980
4	12,13	10	**12,13**	13	**347**	·4766	**8**	16·821	27·8789
5	13,14	11	**13,14**	14	**348**	·4610	**9**	17·806	27·9597
6	14,15	12	**14,15**	15	**349**	·4453	**10**	18·790	28·0406
7	15,16	13	**15,16**	16	**350**	·4297	**11**	19·774	28·1214
1	16,17	14	**16,17**	17	**351**	·4140	**12**	20·759	28·2023
2	17,18	15	**17,18**	18	**352**	·3984	**13**	21·743	28·2831
3	18,19	16	**18,19**	19	**353**	·3827	**14**	22·727	28·3640
4	19,20	17	**19,20**	20	**354**	·3671	**15**	23·712	28·4448
							Chaitra (when there is Adhika masa).		
5	20,21	18	**20,21**	21	**355**	·3514	1	24·696	28·5257
6	21,22	19	**21,22**	22	**356**	·3358	2	25·681	28·6066
7	22,23	20	**22,23**	23	**357**	·3201	3	26·665	28·6874
1	23,24	21	**23,24**	24	**358**	·3045	4	0·095	28·7683
2	24,25	22	**24,25**	25	**359**	·2888	5	1·079	28·8491
3	25,26	23	**25,26**	26	**360**	·2732	6	2·063	28·9300
4	26,27	24	**26,27**	27	**361**	·2575	7	3·048	29·0108
5	27,28	25	**27,28**	28	**362**	·2419	8	4·032	29·0917
6	28,29	26	**28,29**	29	**363**	·2262	9	5·016	29·1725
7	29,30	27	**29,30**	30	**364**	·2106	10	6·001	29·2533
1	30,31	28	**30,31**	30	**365**	·1950	11	6·985	29·3342
Sankranti.	Day of month.				S. Sid. 30·3535		A. Sid. 30·3388		
	„ year.				„ 365·2587		„ 365·2587		
					Chittirai.				
				(Mal.)	Medam				
	Dec.	Feb.	Mar.	(Beng.)	Vaisakha.		*Chaitra (Lunar).*		
2	31, 1	29, 1	**31, 1**	1	**366**	·1793	12	7·969	29·4150
	Jan.	Mar.	Apr.						
3	1, 2	1, 2	**1, 2**	2	**367**	·1637	13	8·954	
4	2, 3	2, 3	**2, 3**	3	**368**	·1480	14	9·938	
5	3, 4	3, 4	**3, 4**	4	**369**	·1324	15	10·923	
6	4, 5	4, 5	**4, 5**	5	**370**	·1167	**1**	11·907	
7	5, 6	5, 6	**5, 6**	6	**371**	·1011	**2**	12·891	
1	6, 7	6, 7	**6, 7**	7	**372**	·0854	**3**	13·876	
2	7, 8	7, 8	**7, 8**	8	**373**	·0698	**4**	14·860	
3	8, 9	8, 9	**8, 9**	9	**374**	·0541	**5**	15·844	
4	9,10	9,10	**9,10**	10	**375**	·0385	**6**	16·829	
5	10,11	10,11	**10,11**	11	**376**	·0228	**7**	17·813	
6	11,12	11,12	**11,12**	12	**377**	·0072	**8**	18·797	
...	...	...	...	...	**377**	·9915	**9**	19·782	
7	12,13	12,13	**12,13**	13	**378**	·9759	**10**	20·766	
1	13,14	13,14	**13,14**	14	**379**	·9602	**11**	21·750	
2	14,15	14,15	**14,15**	15	**380**	·9446	**12**	22·735	
3	15,16	15,16	**15,16**	16	**381**	·9290	**13**	23·719	
4	16,17	16,17	**16,17**	17	**382**	·9133	**14**	24·703	
5	17,18	17,18	**17,18**	18	**383**	·8977	**15**	25·688	

* When two dates are given in any of these columns, use the first in a leap year; otherwise use the second.

TABLE IX—(a)—For Tithis.

Moon's Anomaly and Moon's Equation of the Centre in Days and Fractions of a Day.

SURYA SIDDHANTA.

Eqn.	0	1	2	3	4	5	6	7	8	9	Eqn.	9	8	7	6	5	4	3	2	1	0
—	Moon's Anomaly in days.										—	Moon's Anomaly in days.									
·00	·000	·011	·023	·034	·046	·057	·069	·080	·091	·102	·41	...	...	...	...	...	7·275	7·570	7·677	7·785	7·874
·01	·114	·125	·137	·148	·160	·171	·183	·195	·206	·218	·40	7·938	8·002	8·066	8·130	8·176	8·222	8·268	8·314	8·360	8·407
·02	·229	·241	·252	·264	·275	·286	·297	·309	·320	·332	·39	8·443	8·479	8·515	8·552	8·588	8·623	8·659	8·694	8·724	8·754
·03	·343	·355	·366	·378	·389	·401	·413	·424	·436	·447	·38	8·784	8·813	8·842	8·871	8·900	8·929	8·959	8·985	9·011	9·035
·04	·458	·469	·481	·492	·504	·516	·527	·539	·550	·562	·37	9·060	9·085	9·109	9·134	9·159	9·184	9·208	9·233	9·256	9·278
·05	·573	·585	·597	·608	·619	·630	·642	·654	·665	·677	·36	9·299	9·321	9·343	9·365	9·387	9·409	9·430	9·452	9·474	9·495
·06	·689	·700	·712	·724	·735	·747	·759	·771	·782	·793	·35	9·517	9·536	9·555	9·575	9·594	9·613	9·632	9·652	9·671	9·690
·07	·805	·816	·828	·840	·851	·863	·875	·886	·898	·910	·34	9·709	9·728	9·747	9·766	9·785	9·804	9·821	9·838	9·855	9·873
·08	·921	·933	·945	·957	·968	·979	·991	1·003	1·015	1·027	·33	9·890	9·907	9·925	9·943	9·960	9·977	9·994	10·012	10·029	10·046
·09	1·038	1·050	1·062	1·074	1·086	1·098	1·109	1·121	1·132	1·144	·32	10·063	10·079	10·095	10·111	10·127	10·143	10·159	10·175	10·191	10·206
·10	1·156	1·168	1·179	1·191	1·203	1·215	1·227	1·239	1·251	1·263	·31	10·222	10·238	10·254	10·269	10·285	10·301	10·317	10·332	10·347	10·362
·11	1·275	1·287	1·299	1·310	1·322	1·334	1·346	1·358	1·370	1·382	·30	10·376	10·391	10·406	10·421	10·435	10·450	10·464	10·479	10·493	10·508
·12	1·394	1·406	1·418	1·430	1·442	1·454	1·466	1·478	1·490	1·502	·29	10·523	10·537	10·552	10·566	10·581	10·595	10·610	10·624	10·638	10·651
·13	1·514	1·526	1·538	1·550	1·562	1·574	1·587	1·599	1·611	1·624	·28	10·665	10·679	10·692	10·706	10·719	10·733	10·747	10·760	10·774	10·787
·14	1·636	1·648	1·660	1·672	1·684	1·697	1·709	1·721	1·734	1·746	·27	10·801	10·815	10·829	10·843	10·857	10·870	10·883	10·896	10·909	10·922
·15	1·758	1·771	1·783	1·795	1·808	1·820	1·832	1·844	1·856	1·868	·26	10·934	10·947	10·960	10·973	10·985	10·998	11·011	11·024	11·037	11·050
·16	1·881	1·893	1·906	1·919	1·931	1·944	1·957	1·969	1·982	1·994	·25	11·063	11·076	11·088	11·101	11·114	11·127	11·139	11·152	11·164	11·176
·17	2·007	2·020	2·032	2·044	2·057	2·069	2·082	2·094	2·107	2·120	·24	11·188	11·200	11·213	11·225	11·237	11·249	11·261	11·273	11·285	11·297
·18	2·132	2·145	2·157	2·170	2·183	2·196	2·209	2·222	2·234	2·247	·23	11·309	11·321	11·334	11·346	11·358	11·370	11·382	11·395	11·407	11·419
·19	2·260	2·273	2·286	2·299	2·312	2·325	2·338	2·351	2·364	2·377	·22	11·430	11·442	11·453	11·465	11·476	11·488	11·499	11·511	11·522	11·534
·20	2·390	2·403	2·415	2·427	2·440	2·453	2·466	2·479	2·493	2·506	·21	11·545	11·557	11·569	11·581	11·592	11·604	11·615	11·627	11·638	11·649
·21	2·520	2·533	2·546	2·560	2·573	2·587	2·600	2·614	2·627	2·640	·20	11·661	11·672	11·684	11·695	11·706	11·717	11·728	11·739	11·750	11·761
·22	2·653	2·667	2·680	2·694	2·707	2·721	2·734	2·748	2·761	2·775	·19	11·772	11·783	11·794	11·805	11·816	11·827	11·838	11·849	11·860	11·871
·23	2·788	2·802	2·816	2·829	2·843	2·857	2·871	2·885	2·900	2·914	·18	11·882	11·893	11·905	11·916	11·927	11·938	11·949	11·960	11·970	11·981
·24	2·928	2·942	2·956	2·970	2·984	2·998	3·012	3·026	3·039	3·053	·17	11·991	12·002	12·013	12·023	12·034	12·044	12·055	12·066	12·077	12·088
·25	3·067	3·081	3·095	3·110	3·124	3·139	3·154	3·169	3·183	3·198	·16	12·099	12·109	12·120	12·130	12·141	12·152	12·162	12·173	12·184	12·194
·26	3·213	3·228	3·242	3·256	3·271	3·286	3·300	3·315	3·330	3·345	·15	12·205	12·215	12·226	12·237	12·247	12·257	12·268	12·278	12·288	12·299
·27	3·359	3·374	3·389	3·404	3·419	3·434	3·450	3·466	3·481	3·496	·14	12·309	12·319	12·330	12·340	12·350	12·361	12·371	12·382	12·393	12·403
·28	3·512	3·527	3·543	3·558	3·574	3·590	3·605	3·621	3·636	3·652	·13	12·413	12·424	12·434	12·444	12·455	12·465	12·475	12·485	12·495	12·505
·29	3·668	3·683	3·699	3·714	3·730	3·746	3·763	3·779	3·796	3·812	·12	12·515	12·525	12·536	12·546	12·557	12·567	12·577	12·587	12·597	12·607
·30	3·829	3·846	3·862	3·879	3·895	3·912	3·928	3·945	3·961	3·977	·11	12·617	12·627	12·637	12·647	12·657	12·667	12·677	12·688	12·698	12·708
·31	3·993	4·010	4·027	4·044	4·062	4·080	4·098	4·115	4·133	4·151	·10	12·718	12·729	12·738	12·748	12·758	12·768	12·778	12·788	12·797	12·807
·32	4·169	4·186	4·204	4·221	4·239	4·256	4·274	4·292	4·310	4·328	·09	12·817	12·827	12·838	12·848	12·857	12·867	12·877	12·887	12·897	12·907
·33	4·347	4·366	4·385	4·405	4·424	4·443	4·462	4·481	4·500	4·519	·08	12·916	12·926	12·936	12·946	12·956	12·966	12·976	12·986	12·996	13·006
·34	4·538	4·558	4·577	4·596	4·615	4·636	4·657	4·678	4·699	4·720	·07	13·015	13·025	13·035	13·044	13·054	13·064	13·073	13·083	13·093	13·102
·35	4·741	4·762	4·783	4·803	4·824	4·845	4·866	4·888	4·909	4·930	·06	13·112	13·122	13·132	13·142	13·152	13·162	13·171	13·181	13·191	13·200
·36	4·954	4·977	5·001	5·025	5·048	5·072	5·096	5·119	5·142	5·166	·05	13·210	13·220	13·229	13·239	13·249	13·258	13·268	13·278	13·288	13·298
·37	5·189	5·213	5·238	5·265	5·291	5·318	5·345	5·372	5·398	5·425	·04	13·307	13·317	13·326	13·336	13·345	13·355	13·365	13·374	13·384	13·393
·38	5·452	5·478	5·504	5·532	5·564	5·595	5·626	5·658	5·689	5·721	·03	13·403	13·413	13·423	13·432	13·442	13·452	13·461	13·471	13·480	13·490
·39	5·752	5·784	5·815	5·852	5·890	5·927	5·965	6·003	6·040	6·078	·02	13·499	13·509	13·518	13·528	13·537	13·547	13·557	13·567	13·576	13·586
·40	6·116	6·165	6·213	6·261	6·309	6·357	6·405	6·471	6·537	6·603	·01	13·595	13·605	13·614	13·624	13·634	13·643	13·653	13·662	13·672	13·681
·41	6·669	6·759	6·868	7·077	7·275	...	...	...	...	...	·00	13·691	13·701	13·710	13·720	13·730	13·739	13·749	13·758	13·768	13·777

Maximum equation ·413929 for Anomaly of 7·2752 days.

TABLE IX—(*b*)—For Tithis.

SURYA SIDDHANTA.

Moon's Anomaly and Moon's Equation of the Centre in Days and Fractions of a Day.

Moon's Anomaly in days.

Eqn. +	0	1	2	3	4	5	6	7	8	9
·00	13·777	13·786	13·796	13·805	13·815	13·824	13·834	13·843	13·853	13·863
·01	13·873	13·882	13·892	13·902	13·911	13·920	13·930	13·940	13·949	13·959
·02	13·968	13·978	13·987	13·997	14·007	14·017	14·026	14·036	14·045	14·055
·03	14·064	14·074	14·083	14·093	14·102	14·112	14·122	14·131	14·141	14·151
·04	14·161	14·170	14·180	14·189	14·199	14·209	14·218	14·228	14·237	14·247
·05	14·256	14·266	14·275	14·285	14·295	14·305	14·315	14·325	14·334	14·344
·06	14·354	14·363	14·373	14·383	14·392	14·402	14·412	14·422	14·431	14·441
·07	14·451	14·461	14·471	14·481	14·490	14·500	14·510	14·519	14·529	14·539
·08	14·548	14·558	14·568	14·578	14·588	14·598	14·608	14·618	14·628	14·638
·09	14·647	14·657	14·667	14·677	14·687	14·697	14·707	14·717	14·727	14·737
·10	14·747	14·757	14·766	14·776	14·786	14·796	14·806	14·816	14·826	14·836
·11	14·846	14·856	14·866	14·877	14·887	14·897	14·907	14·917	14·927	14·937
·12	14·947	14·957	14·967	14·977	14·987	14·997	15·008	15·018	15·029	15·039
·13	15·049	15·059	15·069	15·079	15·089	15·099	15·110	15·120	15·130	15·141
·14	15·151	15·161	15·172	15·183	15·193	15·204	15·214	15·224	15·235	15·245
·15	15·255	15·266	15·276	15·286	15·297	15·307	15·317	15·328	15·339	15·349
·16	15·360	15·370	15·381	15·392	15·402	15·413	15·424	15·434	15·445	15·455
·17	15·466	15·477	15·487	15·498	15·509	15·520	15·531	15·541	15·552	15·563
·18	15·573	15·584	15·594	15·605	15·616	15·627	15·638	15·649	15·661	15·672
·19	15·683	15·694	15·705	15·716	15·727	15·738	15·749	15·760	15·771	15·782
·20	15·793	15·804	15·815	15·826	15·837	15·848	15·859	15·870	15·882	15·893
·21	15·905	15·916	15·927	15·939	15·950	15·962	15·973	15·985	15·997	16·009
·22	16·020	16·032	16·043	16·055	16·066	16·078	16·089	16·101	16·112	16·124
·23	16·135	16·147	16·159	16·172	16·184	16·196	16·208	16·220	16·233	16·245
·24	16·257	16·269	16·281	16·293	16·305	16·317	16·329	16·341	16·354	16·366
·25	16·378	16·390	16·403	16·415	16·427	16·440	16·453	16·466	16·478	16·491
·26	16·504	16·517	16·530	16·543	16·556	16·569	16·581	16·594	16·607	16·620
·27	16·632	16·645	16·658	16·671	16·684	16·697	16·711	16·725	16·739	16·753
·28	16·767	16·780	16·794	16·807	16·821	16·835	16·848	16·862	16·875	16·889
·29	16·903	16·916	16·930	16·944	16·959	16·973	16·988	17·002	17·017	17·031
·30	17·046	17·061	17·075	17·090	17·104	17·119	17·133	17·148	17·163	17·178
·31	17·192	17·207	17·222	17·237	17·251	17·269	17·285	17·300	17·316	17·332
·32	17·348	17·363	17·379	17·395	17·411	17·427	17·443	17·459	17·475	17·491
·33	17·508	17·525	17·542	17·560	17·577	17·594	17·611	17·629	17·647	17·664
·34	17·681	17·699	17·716	17·733	17·750	17·769	17·788	17·807	17·826	17·845
·35	17·864	17·883	17·902	17·922	17·941	17·960	17·979	17·999	18·018	18·037
·36	18·059	18·080	18·102	18·124	18·145	18·167	18·189	18·221	18·233	18·255
·37	18·276	18·298	18·321	18·346	18·370	18·395	18·420	18·445	18·469	18·494
·38	18·519	18·543	18·569	18·595	18·625	18·654	18·683	18·713	18·742	18·772
·39	18·801	18·831	18·860	18·895	18·931	18·966	19·003	19·039	19·075	19·111
·40	19·147	19·194	19·240	19·286	19·332	19·378	19·424	19·488	19·552	19·616
·41	19·680	19·768	19·877	19·984	20·280	...	...	...	...	...

Maximum equation ·413929 for Anomaly of 20·2797 days.

Moon's Anomaly in days.

Eqn. +	9	8	7	6	5	4	3	2	1	0
·41	...	...	...	...	...	20·280	20·577	20·686	20·795	20·885
·40	20·951	21·017	21·083	21·149	21·197	21·245	21·293	21·341	21·389	21·438
·39	21·476	21·514	21·552	21·589	21·627	21·664	21·702	21·739	21·770	21·802
·38	21·833	21·865	21·896	21·928	21·959	21·990	22·022	22·050	22·076	22·102
·37	22·129	22·156	22·182	22·209	22·236	22·263	22·289	22·316	22·341	22·365
·36	22·388	22·412	22·436	22·458	22·482	22·506	22·529	22·553	22·577	22·600
·35	22·624	22·645	22·666	22·688	22·709	22·730	22·751	22·771	22·792	22·813
·34	22·834	22·855	22·876	22·897	22·918	22·939	22·958	22·977	22·996	23·016
·33	23·035	23·054	23·073	23·092	23·111	23·130	23·149	23·169	23·188	23·207
·32	23·226	23·244	23·262	23·280	23·298	23·315	23·333	23·350	23·368	23·385
·31	23·403	23·421	23·439	23·456	23·474	23·492	23·510	23·527	23·544	23·561
·30	23·577	23·594	23·610	23·626	23·642	23·659	23·675	23·692	23·708	23·725
·29	23·742	23·758	23·775	23·791	23·808	23·824	23·841	23·856	23·871	23·886
·28	23·902	23·918	23·933	23·949	23·964	23·980	23·996	24·011	24·027	24·042
·27	24·058	24·074	24·089	24·104	24·120	24·135	24·150	24·165	24·180	24·195
·26	24·209	24·224	24·239	24·254	24·268	24·283	24·298	24·312	24·326	24·341
·25	24·356	24·371	24·385	24·400	24·415	24·430	24·444	24·459	24·473	24·487
·24	24·501	24·515	24·528	24·542	24·556	24·570	24·584	24·598	24·612	24·626
·23	24·640	24·654	24·669	24·683	24·697	24·711	24·725	24·738	24·752	24·766
·22	24·779	24·793	24·806	24·820	24·833	24·847	24·860	24·874	24·887	24·901
·21	24·914	24·928	24·941	24·954	24·967	24·981	24·994	25·008	25·021	25·034
·20	25·048	25·061	25·075	25·088	25·101	25·114	25·127	25·139	25·151	25·164
·19	25·177	25·190	25·203	25·216	25·229	25·242	25·255	25·268	25·281	25·294
·18	25·307	25·320	25·332	25·345	25·358	25·371	25·384	25·397	25·409	25·422
·17	25·434	25·447	25·460	25·472	25·485	25·497	25·510	25·522	25·534	25·547
·16	25·560	25·572	25·585	25·597	25·610	25·623	25·635	25·648	25·661	25·673
·15	25·686	25·698	25·710	25·722	25·734	25·746	25·759	25·771	25·783	25·796
·14	25·808	25·820	25·833	25·845	25·857	25·870	25·882	25·893	25·906	25·918
·13	25·930	25·943	25·955	25·967	25·980	25·992	26·004	26·016	26·028	26·040
·12	26·052	26·064	26·076	26·088	26·100	26·112	26·124	26·136	26·148	26·160
·11	26·172	26·184	26·196	26·208	26·220	26·232	26·244	26·255	26·267	26·279
·10	26·291	26·303	26·315	26·327	26·339	26·351	26·363	26·375	26·386	26·398
·09	26·410	26·422	26·433	26·445	26·456	26·468	26·480	26·492	26·504	26·516
·08	26·527	26·539	26·551	26·563	26·575	26·587	26·598	26·609	26·621	26·633
·07	26·644	26·656	26·668	26·679	26·691	26·703	26·714	26·726	26·738	26·749
·06	26·761	26·772	26·783	26·795	26·807	26·819	26·830	26·842	26·854	26·865
·05	26·877	26·889	26·900	26·912	26·924	26·935	26·946	26·957	26·969	26·981
·04	26·992	27·004	27·015	27·027	27·038	27·050	27·062	27·073	27·085	27·096
·03	27·108	27·119	27·130	27·141	27·153	27·165	27·176	27·188	27·199	27·211
·02	27·222	27·234	27·245	27·257	27·268	27·280	27·291	27·302	27·313	27·325
·01	27·336	27·348	27·359	27·371	27·383	27·394	27·406	27·417	27·429	27·440
·00	27·452	27·463	27·474	27·485	27·497	27·508	27·520	27·531	27·543	27·555

TABLE IX—(c)—For Tithis.

Sun's Anomaly expressed as Days of the Solar Year and Sun's Equation of the Centre in Fractions of a Day.

(SURYA SIDDHANTA.)

Sun's Anomaly in days of the Solar Year.

Eqn. +	9	8	7	6	5	4	3	2	1	0
·17	...	...	...	...	0·77	2·25	3·73	5·04	6·19	7·35
·16	8·45	9·40	10·35	11·30	12·22	13·02	13·82	14·63	15·43	16·19
·15	16·89	17·60	18·31	19·02	19·72	20·34	20·97	21·60	22·22	22·85
·14	23·47	24·04	24·60	25·17	25·74	26·31	26·88	27·43	27·96	28·48
·13	28·99	29·51	30·03	30·55	31·07	31·56	32·04	32·52	33·00	33·48
·12	33·96	34·44	34·92	35·37	35·82	36·28	36·73	37·18	37·63	38·08
·11	38·53	38·96	39·39	39·81	40·24	40·66	41·09	41·51	41·94	42·36
·10	42·76	43·16	43·57	43·97	44·37	44·78	45·18	45·58	45·99	46·39
·09	46·76	47·15	47·53	47·92	48·30	48·69	49·07	49·46	49·84	50·22
·08	50·58	50·95	51·32	51·69	52·05	52·42	52·79	53·16	53·53	53·90
·07	54·25	54·60	54·96	55·32	55·67	56·03	56·39	56·75	57·10	57·46
·06	57·80	58·15	58·50	58·85	59·19	59·54	59·89	60·24	60·58	60·93
·05	61·27	61·61	61·95	62·29	62·63	62·97	63·31	63·65	63·99	64·33
·04	64·65	64·99	65·33	65·66	65·99	66·33	66·66	66·99	67·32	67·65
·03	67·97	68·30	68·63	68·96	69·29	69·62	69·94	70·27	70·60	70·92
·02	71·24	71·56	71·89	72·21	72·54	72·87	73·19	73·51	73·83	74·16
·01	74·47	74·79	75·11	75·43	75·76	76·08	76·40	76·72	77·04	77·36
·00	77·67	77·99	78·31	78·63	78·95	79·27	79·59	79·91	80·23	80·55

Sun's Anomaly in days of the Solar Year.

Eqn. —	0	1	2	3	4	5	6	7	8	9
·00	80·55	80·87	81·19	81·51	81·83	82·15	82·47	82·79	83·11	83·43
·01	83·74	84·05	84·37	84·70	85·02	85·34	85·66	85·99	86·31	86·63
·02	86·94	87·26	87·59	87·91	88·23	88·56	88·88	89·21	89·53	89·86
·03	90·18	90·50	90·83	91·15	91·48	91·81	92·13	92·46	92·80	93·13
·04	93·45	93·78	94·11	94·44	94·77	95·10	95·43	95·76	96·10	96·44
·05	96·77	97·11	97·45	97·79	98·13	98·47	98·81	99·14	99·48	99·83
·06	100·17	100·51	100·86	101·21	101·56	101·90	102·25	102·60	102·95	103·29
·07	103·64	103·99	104·35	104·71	105·07	105·42	105·78	106·14	106·49	106·85
·08	107·20	107·57	107·94	108·30	108·67	109·04	109·41	109·78	110·15	110·52
·09	110·88	111·26	111·64	112·03	112·41	112·80	113·18	113·57	113·95	114·33
·10	114·71	115·11	115·51	115·92	116·32	116·72	117·13	117·53	117·93	118·34
·11	118·74	119·16	119·59	120·01	120·44	120·86	121·29	121·71	122·14	122·57
·12	123·01	123·46	123·92	124·37	124·82	125·27	125·73	126·18	126·66	127·14
·13	127·61	128·09	128·58	129·06	129·54	130·02	130·55	131·07	131·59	132·11
·14	132·62	133·14	133·66	134·22	134·79	135·35	135·92	136·49	137·06	137·63
·15	138·25	138·87	139·50	140·13	140·75	141·38	142·08	142·79	143·50	144·21
·16	144·91	145·67	146·47	147·27	148·08	148·88	149·80	150·75	151·70	152·65
·17	153·75	154·90	156·06	157·37	158·85	160·33	162·31	164·41	167·82	...

Maximum equation ·178436 for Anomaly of 171·864 days.

Sun's Anomaly in days of the Solar Year.

Eqn. —	9	8	7	6	5	4	3	2	1	0
·17	...	175·92	179·33	181·42	183·41	184·89	186·36	187·67	188·83	189·98
·16	191·09	192·04	192·99	193·94	194·86	195·66	196·46	197·26	198·06	198·82
·15	199·54	200·24	200·95	201·66	202·36	202·98	203·61	204·23	204·86	205·48
·14	206·11	206·68	207·25	207·81	208·38	208·95	209·52	210·07	210·59	211·11
·13	211·64	212·16	212·67	213·19	213·71	214·19	214·67	215·15	215·63	216·11
·12	216·60	217·08	217·56	218·01	218·46	218·91	219·36	219·81	220·26	220·71
·11	221·18	221·61	222·53	222·45	222·88	223·30	223·72	224·14	224·57	224·99
·10	225·41	225·81	226·21	226·61	227·01	227·42	227·82	228·22	228·62	229·02
·09	229·41	229·79	230·18	230·56	230·94	231·32	231·71	232·09	232·47	232·85
·08	233·23	233·59	233·96	234·33	234·69	235·06	235·43	235·80	236·16	236·53
·07	236·89	237·25	237·60	237·96	238·31	238·67	239·02	239·38	239·73	240·09
·06	240·45	240·80	241·14	241·49	241·83	242·18	242·52	242·87	243·22	243·56
·05	243·92	244·26	244·60	244·93	245·27	245·61	245·94	246·28	246·62	246·96
·04	247·30	247·64	247·98	248·31	248·63	248·96	249·29	249·62	249·95	250·28
·03	250·62	250·95	251·28	251·61	251·93	252·26	252·58	252·90	253·23	253·55
·02	253·88	254·21	254·53	254·86	255·18	255·50	255·82	256·15	256·47	256·79
·01	257·12	257·44	257·76	258·08	258·40	258·72	259·04	259·36	259·67	259·99
·00	260·32	260·64	260·95	261·27	261·59	261·91	262·23	262·54	262·86	263·18

Sun's Anomaly in days of the Solar Year.

Eqn. +	0	1	2	3	4	5	6	7	8	9
·00	263·18	263·50	263·81	264·13	264·45	264·77	265·08	265·40	265·72	266·04
·01	266·37	266·68	267·00	267·32	267·64	267·96	268·28	268·60	268·92	269·23
·02	269·57	269·89	270·21	270·53	270·85	271·18	271·50	271·82	272·15	272·47
·03	272·81	273·13	273·45	273·78	274·10	274·43	274·75	275·08	275·41	275·74
·04	276·08	276·41	276·74	277·06	277·39	277·72	278·05	278·38	278·72	279·05
·05	279·40	279·74	280·08	280·41	280·75	281·09	281·42	281·76	282·10	282·44
·06	282·80	283·14	283·49	283·83	284·18	284·52	284·87	285·21	285·56	285·91
·07	286·27	286·62	286·98	287·33	287·69	288·04	288·40	288·75	289·11	289·46
·08	289·83	290·20	290·56	290·93	291·30	291·66	292·03	292·40	292·76	293·13
·09	293·51	293·88	294·27	294·65	295·03	295·42	295·80	296·18	296·56	296·95
·10	297·34	297·74	298·14	298·54	298·94	299·34	299·74	300·15	300·55	300·95
·11	301·37	301·79	302·21	302·64	303·06	303·48	303·90	304·33	304·75	305·18
·12	305·64	306·09	306·54	306·99	307·44	307·89	308·34	308·79	309·27	309·75
·13	310·24	310·72	311·20	311·68	312·16	312·64	313·16	313·68	314·20	314·72
·14	315·25	315·77	316·29	316·84	317·41	317·98	318·54	319·11	319·68	320·24
·15	320·88	321·50	322·13	322·75	323·37	324·00	324·70	325·41	326·11	326·82
·16	327·54	328·29	329·10	329·90	330·70	331·50	332·42	333·37	334·31	335·26
·17	336·38	337·53	338·68	339·99	341·47	342·95	344·93	347·03	350·44	...
							363·87	361·77	358·53	...

Maximum equation ·178436 for Anomaly of 354·493 days.

TABLE IX—(*d*)—For Tithis.

Moon's Anomaly and Equation of the Centre expressed in Days and Fractions of a Day.

(ARYA SIDDHANTA.)

Eqn.	0	1	2	3	4	5	6	7	8	9	Eqn.	9	8	7	6	5	4	3	2	1	0
—	Moon's Anomaly in days.										—	Moon's Anomaly in days.									
·00	...	·012	·023	·035	·047	·058	·070	·082	·093	·104	·41	...	...	...	...	...	...	...	7·272	7·470	7·638
·01	·116	·127	·139	·151	·162	·174	·186	·197	·209	·221	·40	7·756	7·862	7·926	7·989	8·053	8·116	8·163	8·209	8·255	8·300
·02	·232	·244	·256	·267	·278	·290	·301	·313	·325	·336	·39	8·346	8·392	8·431	8·468	8·504	8·539	8·575	8·611	8·647	8·683
·03	·348	·360	·371	·383	·395	·407	·418	·430	·441	·452	·38	8·713	8·742	8·771	8·800	8·830	8·859	8·888	8·917	8·947	8·975
·04	·464	·476	·488	·499	·511	·523	·534	·546	·558	·570	·37	9·000	9·025	9·050	9·075	9·100	9·125	9·150	9·174	9·199	9·224
·05	·581	·593	·605	·616	·627	·639	·651	·663	·674	·686	·36	9·248	9·269	9·291	9·313	9·335	9·356	9·377	9·399	9·420	9·441
·06	·698	·710	·722	·733	·745	·757	·769	·781	·792	·803	·35	9·463	9·484	9·505	9·526	9·545	9·564	9·583	9·603	9·622	9·641
·07	·815	·827	·839	·850	·862	·874	·886	·898	·909	·921	·34	9·660	9·680	9·699	9·718	9·737	9·756	9·775	9·794	9·811	9·828
·08	·933	·945	·957	·969	·980	·992	1·004	1·016	1·028	1·040	·33	9·846	9·863	9·881	9·898	9·916	9·933	9·950	9·967	9·984	10·002
·09	1·052	1·064	1·076	1·087	1·099	1·111	1·123	1·135	1·146	1·158	·32	10·019	10·036	10·053	10·070	10·086	10·102	10·118	10·134	10·149	10·165
·10	1·170	1·182	1·194	1·206	1·218	1·230	1·242	1·254	1·266	1·278	·31	10·181	10·196	10·212	10·228	10·243	10·259	10·275	10·291	10·306	10·322
·11	1·290	1·302	1·314	1·326	1·338	1·350	1·362	1·375	1·387	1·399	·30	10·337	10·352	10·367	10·382	10·397	10·401	10·426	10·440	10·455	10·470
·12	1·411	1·423	1·435	1·448	1·460	1·472	1·484	1·496	1·508	1·520	·29	10·484	10·499	10·513	10·528	10·543	10·557	10·572	10·587	10·602	10·616
·13	1·532	1·544	1·556	1·568	1·581	1·593	1·606	1·618	1·631	1·643	·28	10·629	10·643	10·657	10·670	10·684	10·698	10·711	10·725	10·738	10·752
·14	1·655	1·668	1·680	1·692	1·704	1·717	1·729	1·741	1·754	1·766	·27	10·766	10·780	10·794	10·808	10·821	10·835	10·848	10·862	10·875	10·888
·15	1·779	1·791	1·804	1·816	1·828	1·841	1·853	1·865	1·877	1·890	·26	10·901	10·914	10·927	10·939	10·952	10·965	10·978	10·991	11·004	11·017
·16	1·903	1·915	1·928	1·941	1·954	1·966	1·979	1·992	2·004	2·017	·25	11·030	11·043	11·055	11·068	11·081	11·094	11·107	11·119	11·132	11·145
·17	2·030	2·042	2·055	2·067	2·079	2·092	2·105	2·118	2·130	2·143	·24	11·157	11·169	11·182	11·194	11·206	11·218	11·231	11·243	11·255	11·267
·18	2·156	2·168	2·181	2·194	2·207	2·220	2·233	2·246	2·258	2·271	·23	11·279	11·291	11·303	11·315	11·328	11·340	11·352	11·365	11·377	11·389
·19	2·285	2·298	2·311	2·324	2·337	2·350	2·363	2·376	2·389	2·402	·22	11·401	11·413	11·425	11·436	11·448	11·459	11·471	11·482	11·494	11·506
·20	2·415	2·428	2·441	2·453	2·466	2·479	2·493	2·506	2·520	2·533	·21	11·517	11·529	11·541	11·553	11·564	11·576	11·587	11·599	11·611	11·622
·21	2·547	2·560	2·574	2·588	2·601	2·615	2·628	2·642	2·655	2·668	·20	11·634	11·645	11·657	11·668	11·680	11·691	11·702	11·714	11·725	11·736
·22	2·681	2·795	2·709	2·722	2·736	2·749	2·763	2·776	2·890	2·804	·19	11·747	11·758	11·769	11·780	11·791	11·802	11·813	11·824	11·835	11·846
·23	2·818	2·832	2·846	2·860	2·873	2·987	2·902	2·916	2·930	2·944	·18	11·858	11·869	11·881	11·892	11·903	11·914	11·925	11·936	11·947	11·957
·24	2·958	2·972	2·986	3·000	3·015	3·029	3·043	3·057	3·071	3·084	·17	11·968	11·979	11·989	12·000	12·011	12·022	12·033	12·044	12·055	12·065
·25	3·098	3·113	3·128	3·142	3·157	3·172	3·187	3·202	3·216	3·231	·16	12·076	12·087	12·098	12·108	12·119	12·129	12·140	12·151	12·162	12·172
·26	3·246	3·261	3·275	3·290	3·304	3·319	3·334	3·348	3·363	3·378	·15	12·183	12·194	12·205	12·216	12·226	12·237	12·247	12·257	12·268	12·278
·27	3·393	3·407	3·423	3·439	3·454	3·470	3·485	3·501	3·516	3·531	·14	12·289	12·299	12·310	12·320	12·330	12·341	12·351	12·362	12·373	12·384
·28	3·547	3·563	3·578	3·594	3·609	3·625	3·641	3·656	3·672	3·688	·13	12·394	12·404	12·415	12·425	12·436	12·446	12·457	12·467	12·477	12·487
·29	3·703	3·719	3·735	3·751	3·768	3·784	3·801	3·818	3·834	3·851	·12	12·497	12·508	12·519	12·529	12·539	12·549	12·559	12·570	12·580	12·590
·30	3·867	3·884	3·901	3·917	3·934	3·950	3·967	3·983	3·999	4·016	·11	12·600	12·610	12·620	12·631	12·641	12·651	12·661	12·672	12·682	12·692
·31	4·033	4·051	4·068	4·086	4·104	4·122	4·139	4·157	4·175	4·192	·10	12·703	12·713	12·723	12·733	12·743	12·753	12·763	12·773	12·783	12·793
·32	4·210	4·228	4·245	4·262	4·280	4·297	4·315	4·334	4·353	4·372	·09	12·803	12·813	12·824	12·834	12·844	12·854	12·864	12·873	12·883	12·893
·33	4·391	4·411	4·430	4·449	4·468	4·487	4·506	4·525	4·544	4·563	·08	12·903	12·913	12·923	12·933	12·943	12·953	12·964	12·974	12·984	12·994
·34	4·583	4·602	4·621	4·642	4·663	4·684	4·705	4·726	4·747	4·769	·07	13·004	13·014	13·023	13·033	13·043	13·053	13·063	13·072	13·082	13·092
·35	4·790	4·811	4·832	4·852	4·873	4·894	4·915	4·938	4·961	4·984	·06	13·102	13·112	13·122	13·132	13·142	13·152	13·162	13·171	13·181	13·191
·36	5·008	5·031	5·054	5·078	5·101	5·124	5·148	5·171	5·194	5·217	·05	13·201	13·211	13·220	13·230	13·240	13·250	13·260	13·270	13·280	13·290
·37	5·243	5·270	5·297	5·323	5·350	5·377	5·404	5·431	5·458	5·485	·04	13·299	13·309	13·319	13·329	13·338	13·348	13·358	13·367	13·377	13·387
·38	5·512	5·542	5·572	5·602	5·634	5·665	5·697	5·728	5·759	5·790	·03	13·397	13·407	13·417	13·427	13·436	13·446	13·456	13·466	13·475	13·485
·39	5·822	5·860	5·898	5·936	5·974	6·011	6·049	6·086	6·127	6·175	·02	13·495	13·504	13·514	13·524	13·533	13·543	13·553	13·563	13·573	13·583
·40	6·223	6·270	6·318	6·366	6·415	6·480	6·546	6·611	6·677	6·775	·01	13·592	13·602	13·612	13·621	13·631	13·641	13·650	13·660	13·670	13·680
·41	6·875	6·975	7·272	...	...	...	...	...	...	...	·00	13·690	13·700	13·709	13·719	13·729	13·738	13·748	13·758	13·767	13·777

Maximum equation ·411719 for Anomaly of 7·2728 days.

TABLE IX—(*e*)—For Tithis.

ARYA SIDDHANTA.

Moon's Anomaly and Equation of the Centre expressed in days and fractions of a day.

Eqn. +	0	1	2	3	4	5	6	7	8	9	Eqn. +	9	8	7	6	5	4	3	2	1	0
	Moon's Anomaly in days.											Moon's Anomaly in days.									
·00	13·777	13·787	13·796	13·806	13·816	13·825	13·835	13·845	13·855	13·865	·41	...	...	...	...	...	...	...	20·282	20·520	20·650
·01	13·875	13·884	13·894	13·904	13·913	13·923	13·933	13·942	13·952	13·962	·40	20·770	20·878	20·944	21·009	21·075	21·140	21·189	21·237	21·285	21·333
·02	13·971	13·981	13·991	14·001	14·011	14·021	14·030	14·040	14·050	14·059	·39	21·380	21·428	21·469	21·506	21·544	21·581	21·620	21·657	21·695	21·733
·03	14·069	14·079	14·088	14·098	14·108	14·118	14·127	14·137	14·147	14·157	·38	21·765	21·796	21·827	21·858	21·890	21·921	21·952	21·983	22·013	22·043
·04	14·167	14·177	14·187	14·196	14·206	14·216	14·225	14·235	14·244	14·254	·37	22·070	22·097	22·124	22·151	22·178	22·205	22·232	22·258	22·285	22·312
·05	14·264	14·274	14·282	14·294	14·304	14·314	14·324	14·334	14·343	14·353	·36	22·338	22·361	22·385	22·408	22·431	22·454	22·477	22·501	22·524	22·547
·06	14·363	14·373	14·383	14·392	14·402	14·412	14·422	14·432	14·442	14·452	·35	22·571	22·594	22·617	22·640	22·661	22·682	22·703	22·723	22·744	22·765
·07	14·462	14·472	14·482	14·491	14·501	14·511	14·521	14·531	14·540	14·550	·34	22·786	22·808	22·829	22·850	22·871	22·892	22·913	22·934	22·953	22·972
·08	14·560	14·570	14·580	14·590	14·601	14·611	14·621	14·631	14·641	14·651	·33	22·992	23·011	23·030	23·049	23·068	23·087	23·106	23·125	23·144	23·164
·09	14·661	14·671	14·681	14·690	14·700	14·710	14·720	14·730	14·741	14·751	·32	23·183	23·202	23·221	23·240	23·258	23·275	23·293	23·310	23·327	23·345
·10	14·761	14·771	14·781	14·791	14·801	14·811	14·821	14·831	14·841	14·851	·31	23·363	23·380	23·398	23·416	23·433	23·451	23·469	23·487	23·504	23·522
·11	14·862	14·872	14·882	14·893	14·903	14·913	14·923	14·934	14·944	14·954	·30	23·539	23·556	23·572	23·588	23·605	23·621	23·638	23·654	23·671	23·688
·12	14·964	14·974	14·984	14·995	15·005	15·015	15·025	15·035	15·046	15·057	·29	23·704	23·721	23·737	23·754	23·771	23·787	23·804	23·820	23·836	23·852
·13	15·067	15·077	15·087	15·097	15·108	15·118	15·129	15·139	15·150	15·160	·28	23·867	23·883	23·899	23·914	23·930	23·946	23·961	23·977	23·992	24·008
·14	15·170	15·181	15·191	15·202	15·213	15·224	15·234	15·244	15·255	15·265	·27	24·024	24·039	24·054	24·070	24·085	24·101	24·116	24·132	24·147	24·162
·15	15·276	15·286	15·297	15·307	15·317	15·328	15·338	15·349	15·360	15·371	·23	24·177	24·192	24·207	24·221	24·236	24·251	24·266	24·280	24·294	24·309
·16	15·382	15·392	15·403	15·414	15·425	15·435	15·446	15·457	15·467	15·478	·25	24·324	24·339	24·353	24·368	24·383	24·398	24·413	24·427	24·442	24·457
·17	15·489	15·499	15·510	15·521	15·532	15·543	15·554	15·565	15·575	15·586	·24	24·471	24·485	24·498	24·512	24·526	24·540	24·555	24·569	24·583	24·597
·18	15·597	15·607	15·618	15·629	15·640	15·651	15·662	15·673	15·685	15·696	·23	24·611	24·625	24·639	24·653	24·668	24·682	24·696	24·709	24·723	24·737
·19	15·708	15·719	15·730	15·741	15·752	15·763	15·774	15·785	15·796	15·807	·22	24·751	24·765	24·779	24·792	24·806	24·820	24·833	24·846	24·860	24·874
·20	15·818	15·829	15·840	15·852	15·863	15·874	15·886	15·897	15·909	15·920	·21	24·887	24·900	24·913	24·927	24·940	24·954	24·967	24·981	24·995	25·008
·21	15·932	15·943	15·955	15·967	16·978	15·990	16·001	16·013	16·025	16·037	·20	25·022	25·035	25·049	25·062	25·075	25·088	25·101	25·114	25·127	25·140
·22	16·048	16·060	16·072	16·083	16·095	16·106	16·118	16·129	16·141	16·153	·19	25·153	25·166	25·179	25·192	25·205	25·218	25·231	25·244	25·257	25·270
·23	16·165	16·177	16·189	16·202	16·214	16·226	16·239	16·251	16·263	16·275	·18	25·283	25·296	25·309	25·322	25·335	25·348	25·361	25·374	25·387	25·399
·24	16·287	16·299	16·311	16·323	16·336	16·348	16·360	16·372	16·385	16·397	·17	25·412	25·425	25·437	25·450	25·463	25·476	25·488	25·500	25·513	25·525
·25	16·409	16·422	16·435	16·447	16·460	16·473	16·486	16·499	16·511	16·524	·16	25·533	25·551	25·563	25·576	25·589	25·601	25·614	25·627	25·640	25·652
·26	16·537	16·550	16·563	16·576	16·589	16·602	16·615	16·627	16·640	16·653	·15	25·665	25·677	25·689	25·702	25·714	25·727	25·739	25·751	25·764	25·776
·27	16·666	16·679	16·692	16·706	16·719	16·733	16·746	16·760	16·774	16·788	·14	25·789	25·801	25·814	25·826	25·838	25·851	25·863	25·875	25·887	25·900
·28	16·802	16·816	16·829	16·843	16·856	16·870	16·884	16·897	16·911	16·925	·13	25·912	25·924	25·936	25·949	25·962	25·974	25·987	25·999	26·011	26·023
·29	16·938	16·952	16·967	16·982	16·997	17·011	17·026	17·041	17·055	17·070	·12	26·035	26·047	26·059	26·071	26·083	26·095	26·107	26·120	26·132	26·144
·30	17·084	17·099	17·114	17·128	17·143	17·157	17·172	17·187	17·202	17·217	·11	26·156	26·168	26·180	26·193	26·205	26·217	26·229	26·241	26·253	26·265
·31	17·232	17·248	17·263	17·279	17·295	17·311	17·326	17·342	17·358	17·373	·10	26·277	26·289	26·301	26·313	26·325	26·337	26·349	26·361	26·373	26·385
·32	17·389	17·405	17·421	17·437	17·453	17·469	17·485	17·501	17·518	17·535	·09	26·397	26·409	26·420	26·432	26·444	26·456	26·468	26·479	26·491	26·503
·33	17·552	17·570	17·587	17·604	17·621	17·638	17·656	17·673	17·691	17·708	·08	26·515	26·527	26·539	26·551	26·563	26·575	26·586	26·598	26·610	26·622
·34	17·726	17·743	17·760	17·779	17·793	17·817	17·836	17·855	17·874	17·894	·07	26·634	26·646	26·657	26·669	26·681	26·693	26·705	26·716	26·728	26·740
·35	17·913	17·932	17·951	17·971	17·990	18·000	18·029	18·049	18·070	18·091	·03	26·752	26·763	26·774	26·786	26·798	26·810	26·822	26·833	26·845	26·857
·36	18·113	18·134	18·155	18·177	18·188	18·219	18·241	18·263	18·285	18·303	·05	26·869	26·881	26·892	26·904	26·916	26·923	26·939	26·950	26·962	26·974
·37	18·330	18·355	18·380	18·404	18·429	18·454	18·479	18·504	18·529	18·554	·04	26·985	26·997	27·009	27·021	27·032	27·044	27·056	27·067	27·079	27·091
·38	18·579	18·607	18·637	18·666	18·695	18·724	18·754	18·783	18·812	18·841	·03	27·102	27·113	27·125	27·137	27·148	27·160	27·172	27·184	27·195	27·207
·39	18·871	18·907	18·943	18·979	19·015	19·050	19·086	19·123	19·162	19·203	·02	27·212	27·230	27·242	27·254	27·265	27·277	27·288	27·299	27·311	27·323
·40	19·254	19·299	19·345	19·391	19·438	19·501	19·565	19·623	19·692	19·793	·01	27·334	27·346	27·358	27·369	27·381	27·393	27·404	27·416	27·428	27·439
·41	19·916	20·084	20·282	...	...	...	...	...	...	...	·00	27·451	27·462	27·473	27·485	27·497	27·508	27·520	27·532	27·543	27·555

Maximum equation ·41171 for Anomaly of 20·2817 days.

TABLE IX—(*h*)—For Tithis.

Sun's Anomaly and Equation. Surya Siddhanta.

Palas	Eqn. +	50			40			30			20			10			0		
		d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.
Ghatikas.	**10**		...		359	13	0	0	46	30	4	47	0	8	1	10	10	38	50
,,	**9**	13	6	20	15	21	0	17	23	50	19	22	30	21	6	10	22	51	0
,,	**8**	24	29	50	26	5	0	27	36	10	29	3	0	30	30	20	31	54	10
,,	**7**	33	14	30	34	32	50	35	49	30	37	5	30	38	21	30	39	31	0
,,	**6**	40	42	50	41	54	0	43	2	50	44	10	30	45	15	50	46	23	20
,,	**5**	47	27	30	48	32	0	49	34	20	50	37	40	51	39	20	52	41	0
,,	**4**	53	43	10	54	40	40	55	40	30	56	41	0	57	40	10	58	37	0
,,	**3**	59	35	0	60	33	0	61	31	10	62	28	30	63	23	30	64	19	50
,,	**2**	65	16	0	66	12	20	67	5	30	68	0	30	68	56	10	69	50	40
,,	**1**	70	45	40	71	38	20	72	32	40	73	27	10	74	21	0	75	13	0
,,	**0**	76	6	50	77	0	40	77	53	50	78	48	20	79	39	10	80	33	0

Palas.	Eqn. —	0			10			20			30			40			50		
		d.	g.	p.	d	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.
Ghatikas.	**0**	80	33	0	81	26	50	82	17	40	83	12	10	84	4	40	84	59	10
,,	**1**	85	56	40	86	45	0	87	38	50	88	33	30	89	27	40	90	20	20
,,	**2**	91	14	50	92	9	10	93	5	30	94	0	30	94	53	40	95	49	20
,,	**3**	96	46	10	97	42	30	98	37	30	99	34	20	100	32	20	101	31	0
,,	**4**	102	29	0	103	25	10	104	25	0	105	24	50	106	25	20	107	22	50
,,	**5**	108	24	20	109	26	40	110	28	20	111	31	40	112	34	0	113	38	30
,,	**6**	114	42	40	115	49	40	116	54	50	118	2	30	119	12	0	120	23	10
,,	**7**	121	35	0	122	44	30	124	0	30	125	15	50	126	33	10	127	51	0
,,	**8**	129	11	50	130	35	40	132	3	0	133	29	50	135	1	0	136	35	30
,,	**9**	138	15	0	139	59	50	141	43	30	143	42	10	145	45	0	147	59	10
,,	**10**	150	27	10	153	4	50	156	19	0	160	19	30	167	8	0		...	

Maximum equation—10 ghatikas 42 palas for Anomaly of 171 days 51 ghatikas 50 palas.

Palas.	Eqn. —	50			40			30			20			10			0		
		d.	g.	p.	d.	g	p.	d.	g.	p.	d.	g.	p	d.	g.	p.	d.	g.	p.
Ghatikas.	**10**		...		176	35	30	183	24	20	187	24	30	190	38	30	193	16	20
,,	**9**	195	44	10	197	58	40	200	1	20	202	0	20	203	43	40	205	28	50
,,	**8**	207	8	0	208	43	0	210	13	40	211	40	50	213	8	0	214	31	40
,,	**7**	215	52	10	217	10	20	218	27	20	219	43	0	220	59	30	222	8	40
,,	**6**	223	20	10	224	31	40	225	40	50	226	48	20	227	53	50	229	1	10
,,	**5**	230	5	30	231	9	20	232	11	50	233	15	0	234	17	0	235	19	0
,,	**4**	236	21	0	237	18	10	238	18	20	239	18	30	240	18	0	241	14	40
,,	**3**	242	12	20	243	11	20	244	9	10	245	6	20	246	1	0	246	57	40
,,	**2**	247	54	10	248	49	30	249	43	10	250	38	30	251	34	30	252	28	40
,,	**1**	253	23	20	254	15	40	255	10	30	256	5	20	256	58	50	257	51	50
,,	**0**	258	44	50	259	38	20	260	31	50	261	26	0	262	16	40	263	10	40

Palas.	Eqn. +	0			10			20			30			40			50		
		d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.	d.	g.	p.
Ghatikas.	**0**	263	10	40	264	4	20	264	55	30	265	49	40	266	42	40	267	36	50
,,	**1**	268	30	20	269	22	50	270	16	20	271	11	10	272	5	20	272	58	10
,,	**2**	273	53	0	274	47	10	275	43	10	276	38	30	277	31	30	278	27	30
,,	**3**	279	24	0	280	20	30	281	15	20	282	12	30	283	10	20	284	8	40
,,	**4**	285	7	0	286	3	30	287	3	10	288	2	40	289	2	50	290	2	40
,,	**5**	291	2	40	292	4	30	293	6	0	294	9	10	295	11	40	296	16	0
,,	**6**	297	20	20	298	26	50	299	32	40	300	40	40	301	49	50	303	1	30
,,	**7**	304	12	20	305	22	10	306	38	0	307	53	40	309	10	40	310	28	50
,,	**8**	311	49	20	313	13	0	314	40	40	316	7	50	317	38	40	319	13	40
,,	**9**	320	52	50	322	38	0	324	21	20	326	19	40	328	22	20	330	37	30
,,	**10**	333	5	10	335	42	30	338	56	30	342	57	20	349	46	0		...	

Maximum equation + 10 ghatikas 42 palas for Anomaly of 354 days 29 ghatikas 36 palas.

TABLE IX—(*i*)—For Yogas.

Sun's Anomaly and Equation. Surya Siddhanta.

The Sun's anomaly in this table is expressed in days of the Indian Solar year.

	Eqn. —	50 palas.		40 palas.		30 palas.		20 palas.		10 palas.		0 pala.	
		d.	g.	d.	g.	d.	g.	d.	g.	d.	g.	d.	g.
Ghatikas.	9	...		...		...		...		359	54	1	59
"	8	6	3	9	37	12	23	15	7	17	35	19	43
"	7	21	48	23	50	25	36	27	26	29	11	30	47
"	6	32	26	33	54	35	25	36	57	38	21	39	45
"	5	41	11	42	28	43	51	45	2	46	23	47	33
"	4	48	51	50	5	51	13	52	28	53	36	54	46
"	3	55	59	57	5	58	14	59	23	60	27	61	37
"	2	62	44	63	46	64	54	65	54	67	0	68	[illegible]
"	1	69	7	70	12	71	17	72	14	73	22	74	21
"	0	75	23	76	23	77	27	78	32	79	29	80	33

	Eqn. +	0 pala.		10 palas.		20 palas.		30 palas.		40 palas.		50 palas.	
		d.	g.	d	g.	d.	g.	d.	g.	d.	g.	d.	g.
Ghatikas.	0	80	33	81	37	82	35	83	38	84	44	85	45
"	1	86	45	87	44	88	49	89	48	90	54	91	58
"	2	92	59	94	5	95	10	96	12	97	20	98	26
"	3	99	27	100	38	101	43	102	51	104	1	105	7
"	4	106	19	107	29	108	37	109	51	111	0	112	15
"	5	113	25	114	43	116	3	117	15	118	35	120	2
"	6	121	21	122	44	124	8	125	39	127	12	128	39
"	7	130	19	132	3	133	39	135	29	137	15	139	18
"	8	141	22	143	30	145	58	148	43	151	30	155	1
"	9	159	7	166	27	...		...		...		...	

Maximum equation + 9 ghatikas 13 palas for Anomaly of 171 days 52 ghatikas.

	Eqn. +	50 palas.		40 palas		30 palas.		20 palas.		10 palas.		0 pala.	
		d.	g.	d.	g	d.	g.	d	g.	d.	g.	d.	g.
Ghatikas.	9	...		...		...		...		177	16	184	36
"	8	188	42	192	13	195	0	197	45	200	13	202	21
"	7	204	25	206	27	208	14	210	5	211	41	213	25
"	6	215	3	216	31	218	4	219	35	220	59	222	22
"	5	223	42	225	5	226	28	227	41	229	1	230	18
"	4	231	28	232	42	233	52	235	7	236	15	237	24
"	3	238	36	239	42	240	52	242	0	243	5	244	15
"	2	245	17	246	24	247	31	248	32	249	38	250	44
"	1	251	45	252	50	253	54	254	53	255	59	256	59
"	0	258	2	259	0	260	5	261	9	262	7	263	11

	Eqn. —	0 pala.		10 palas.		20 palas.		30 palas.		40 palas.		50 palas.	
		d.	g.	d.	g.	d.	g.	d.	g.	d.	g.	d.	g.
Ghatikas.	0	263	11	264	14	265	11	266	15	267	20	268	19
"	1	269	23	270	21	271	27	272	26	273	31	274	36
"	2	275	37	276	43	277	48	278	50	279	58	281	4
"	3	282	7	283	16	284	20	285	30	286	39	287	45
"	4	288	57	290	9	291	14	292	29	293	37	294	51
"	5	296	2	297	20	298	39	299	52	301	14	302	39
"	6	303	59	305	22	306	46	308	16	309	49	311	17
"	7	312	56	314	42	316	16	318	6	319	53	321	55
"	8	324	1	326	8	328	35	331	21	334	8	337	38
"	9	341	44	349	4	...		...		...		...	

Maximum equation − 9 ghatikas 13 palas for Anomaly of 354 days 30 ghatikas.

TABLE IX—(i)—For Yogas.

Moon's Anomaly and Equation of the Centre in Days, Ghatikas and Palas.

SURYA SIDDHANTA.

Eqn. Palas. —	0	10	20	30	40	50
Ghat.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.
0	...	0 2 12	0 4 25	0 6 37	0 8 49	0 11 2
1	0 13 14	0 15 26	0 17 38	0 19 51	0 22 5	0 24 19
2	0 26 33	0 28 46	0 31 0	0 33 14	0 35 28	0 37 42
3	0 39 58	0 42 13	0 44 29	0 46 44	0 49 0	0 51 16
4	0 53 32	0 55 47	0 58 3	1 0 20	1 2 37	1 4 54
5	1 7 11	1 9 27	1 11 44	1 14 1	1 16 18	1 18 37
6	1 20 55	1 23 14	1 25 33	1 27 51	1 30 10	1 32 28
7	1 34 47	1 37 11	1 39 34	1 42 57	1 44 21	1 46 44
8	1 49 8	1 51 31	1 53 55	1 56 20	1 58 45	2 1 10
9	2 3 35	2 6 1	2 8 26	2 10 51	2 13 22	2 15 52
10	2 18 23	2 20 54	2 23 25	2 25 55	2 28 26	2 30 57
11	2 33 35	2 36 14	2 38 52	2 41 31	2 44 9	2 46 47
12	2 49 26	2 52 6	2 54 47	2 57 28	3 0 9	3 2 49
13	3 5 30	3 8 11	3 11 3	3 13 55	3 16 46	3 19 38
14	3 22 29	3 25 21	3 28 21	3 31 22	3 34 23	3 37 23
15	3 40 24	3 43 24	3 46 37	3 49 50	3 53 3	3 56 16
16	3 59 29	4 2 42	4 6 10	4 9 38	4 13 6	4 16 34
17	4 20 2	4 23 38	4 27 14	4 30 50	4 34 26	4 38 2
18	4 42 17	4 46 32	4 50 47	4 55 2	4 59 17	5 4 1
19	5 8 45	5 13 29	5 18 12	5 23 24	5 28 37	5 33 49
20	5 40 9	5 46 29	5 52 49	6 0 17	6 7 44	6 17 19
21	6 26 55	6 37 37	6 59 13	...	...	...

Maximum equation—21 ghat., 23 palas for Anomaly of 7 days 16 ghatikas 29 palas.

Eqn. +	0	10	20	30	40	50
Ghat.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.
0	13 46 38	13 48 29	13 50 20	13 52 11	13 54 2	13 55 53
1	13 57 44	13 59 35	14 1 26	14 3 15	14 5 7	14 6 59
2	14 8 51	14 10 43	14 12 35	14 14 27	14 16 19	14 18 12
3	14 20 6	14 22 0	14 23 54	14 25 48	14 27 42	14 29 36
4	14 31 30	14 33 24	14 35 17	14 37 12	14 39 7	14 41 2
5	14 42 57	14 44 53	14 46 48	14 48 43	14 50 40	14 52 37
6	14 54 34	14 56 31	14 58 28	15 0 25	15 2 22	15 4 19
7	15 6 15	15 8 17	15 10 19	15 12 21	15 14 23	15 16 25
8	15 18 27	15 20 29	15 22 30	15 24 33	15 26 37	15 28 40
9	15 30 43	15 32 47	15 34 50	15 36 53	15 39 2	15 41 11
10	15 43 21	15 45 30	15 47 39	15 49 49	15 51 58	15 54 7
11	15 56 24	15 58 40	16 0 57	16 3 14	16 5 30	16 7 47
12	16 10 4	16 12 26	16 14 48	16 17 10	16 19 32	16 21 54
13	16 24 16	16 26 37	16 29 4	16 31 31	16 33 57	16 36 24
14	16 38 51	16 41 17	16 43 56	16 46 35	16 49 14	16 51 53
15	16 54 32	16 57 10	17 0 1	17 2 52	17 5 43	17 8 34
16	17 11 25	17 14 18	17 17 20	17 20 23	17 23 25	17 26 27
17	17 29 30	17 32 49	17 36 8	17 39 27	17 42 46	17 46 4
18	17 49 57	17 53 50	17 57 43	18 1 36	18 5 29	18 9 51
19	18 14 12	18 18 34	18 22 56	18 27 47	18 32 38	18 37 29
20	18 43 27	18 49 25	18 55 23	19 2 30	19 9 36	19 18 50
21	19 28 3	19 38 23	19 59 37	...	...	...

Maximum equation+21 ghat., 23 palas for Anomaly of 20 days 16 ghatikas 47 palas.

Eqn. Palas. —	50	40	30	20	10	0
Ghat.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.
21	...	...	...	7 33 39	7 54 53	8 5 13
20	8 14 26	8 23 40	8 30 46	8 37 53	8 43 51	8 49 49
19	8 55 47	9 0 38	9 5 29	9 10 20	9 14 42	9 19 3
18	9 23 25	9 27 46	9 31 39	9 35 32	9 39 25	9 43 18
17	9 47 12	9 50 31	9 53 50	9 57 9	10 0 28	10 3 46
16	10 6 48	10 9 50	10 12 53	10 15 55	10 18 58	10 21 49
15	10 24 40	10 27 31	10 30 22	10 33 13	10 36 6	10 38 45
14	10 41 24	10 44 3	10 46 42	10 49 21	10 51 59	10 54 26
13	10 56 53	10 59 19	11 1 46	11 4 12	11 6 39	11 9 1
12	11 11 23	11 13 45	11 16 7	11 18 29	11 20 51	11 23 12
11	11 25 29	11 27 46	11 30 2	11 32 19	11 34 35	11 36 52
10	11 39 9	11 41 18	11 43 27	11 45 37	11 47 46	11 49 55
9	11 52 5	11 54 14	11 56 23	11 58 26	12 0 29	12 2 33
8	12 4 36	12 6 40	12 8 43	12 10 46	12 12 48	12 14 50
7	12 16 52	12 18 54	12 20 56	12 22 58	12 25 0	12 27 1
6	12 28 58	12 30 55	12 32 52	12 34 49	12 36 46	12 38 43
5	12 40 40	12 42 36	12 44 31	12 46 27	12 48 22	12 50 18
4	12 52 13	12 54 9	12 56 4	12 57 59	12 59 53	13 1 47
3	13 3 41	13 5 35	13 7 29	13 9 23	13 11 17	13 13 11
2	13 15 4	13 16 56	13 18 48	13 20 40	13 22 32	13 24 24
1	13 26 16	13 28 8	13 30 1	13 31 52	13 33 43	13 35 34
0	13 37 25	13 39 16	13 41 7	13 42 58	13 44 49	13 46 38

Eqn. +	50	40	30	20	10	0
Ghat.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.	d. g. p.
21	...	...	...	20 34 3	20 55 39	21 6 18
20	21 16 42	21 25 25	21 33 23	21 40 53	21 47 40	21 53 27
19	21 59 27	22 4 53	22 10 17	22 15 4	22 20 20	22 24 45
18	22 29 28	22 34 11	22 38 35	22 42 37	22 46 49	22 50 40
17	22 54 52	22 58 41	23 2 20	23 6 8	23 9 40	23 13 30
16	23 17 6	23 20 24	23 23 45	23 27 21	23 30 36	23 34 0
15	23 37 24	23 40 23	23 43 30	23 46 37	23 49 55	23 52 44
14	23 55 56	23 59 8	24 1 55	24 5 0	24 7 45	24 10 45
13	24 13 45	24 16 23	24 19 20	24 22 15	24 24 58	24 27 50
12	24 30 30	24 33 18	24 36 6	24 38 35	24 41 23	24 44 15
11	24 46 45	24 49 23	24 52 11	24 54 35	24 57 8	24 59 42
10	25 2 25	25 5 8	25 7 26	25 10 0	25 12 18	25 14 54
9	25 17 30	25 19 53	25 22 37	25 24 53	25 27 26	25 29 49
8	25 32 4	25 34 28	25 36 51	25 39 27	25 42 1	25 44 9
7	25 46 37	25 49 7	25 51 19	25 53 43	25 56 5	25 58 39
6	26 0 58	26 3 5	26 5 31	26 7 58	26 10 10	26 12 33
5	26 14 41	26 17 5	26 19 29	26 21 33	26 23 55	26 26 21
4	26 28 36	26 30 50	26 33 2	26 35 18	26 37 28	26 39 51
3	26 42 4	26 44 13	26 46 31	26 48 51	26 51 3	26 53 26
2	26 55 41	26 57 51	27 0 6	27 2 14	27 4 29	27 6 51
1	27 8 54	27 11 12	27 13 29	27 15 39	27 17 54	27 20 5
0	27 22 17	27 24 21	27 26 40	27 28 55	27 31 6	27 33 17

TABLE IX—(j)—For Nakshatras.

Moon's Anomaly and Moon's Equation of the Centre in days and fractions of a day.

SURYA SIDDHANTA.

Eqn.	0	1	2	3	4	5	6	7	8	9
—	Moon's Anomaly in days.									
·00	...	·012	·025	·037	·050	·062	·074	·086	·098	·110
·01	·123	·136	·148	·161	·173	·186	·199	·211	·223	·236
·02	·248	·261	·273	·285	·297	·309	·321	·334	·347	·359
·03	·371	·384	·396	·409	·422	·434	·445	·458	·470	·482
·04	·495	·508	·520	·532	·545	·557	·569	·582	·595	·608
·05	·620	·632	·645	·657	·669	·682	·695	·707	·720	·732
·06	·745	·758	·771	·783	·795	·807	·820	·833	·846	·858
·07	·871	·883	·896	·909	·921	·934	·946	·959	·971	·984
·08	·996	1·009	1·022	1·034	1·047	1·060	1·073	1·086	1·099	1·112
·09	1·124	1·136	1·149	1·162	1·174	1·187	1·200	1·213	1·226	1·239
·10	1·252	1·265	1·278	1·291	1·304	1·316	1·329	1·342	1·355	1·367
·11	1·381	1·294	1·407	1·420	1·433	1·446	1·459	1·472	1·485	1·498
·12	1·510	1·523	1·537	1·550	1·562	1·575	1·589	1·602	1·615	1·629
·13	1·643	1·656	1·669	1·682	1·695	1·708	1·721	1·735	1·748	1·761
·14	1·775	1·788	1·801	1·814	1·827	1·840	1·853	1·867	1·880	1·893
·15	1·907	1·921	1·935	1·948	1·962	1·976	1·989	2·003	2·017	2·031
·16	2·044	2·057	2·070	2·084	2·097	2·111	2·125	2·138	2·151	2·166
·17	2·180	2·194	2·208	2·222	2·235	2·248	2·263	2·277	2·291	2·305
·18	2·319	2·334	2·247	2·361	2·376	2·390	2·403	2·416	2·430	2·444
·19	2·457	2·471	2·485	2·500	2·515	2·530	2·545	2·559	2·573	2·588
·20	2·603	2·617	2·621	2·646	2·660	2·674	2·689	2·704	2·718	2·732
·21	2·747	2·762	2·776	2·791	2·806	2·821	2·835	2·850	2·865	2·880
·22	2·896	2·912	2·928	2·943	2·958	2·973	2·988	3·003	3·018	3·033
·23	3·047	3·062	3·078	3·093	3·108	3·124	3·141	3·157	3·172	3·188
·24	3·205	3·221	3·236	3·251	3·267	3·283	3·298	3·315	3·331	3·347
·25	3·362	3·379	3·395	3·411	3·427	3·444	3·461	3·477	3·494	3·511
·26	3·527	3·544	3·561	3·578	3·595	3·612	3·629	3·646	3·663	3·680
·27	3·696	3·713	3·730	3·748	3·765	3·783	3·801	3·819	3·837	3·854
·28	3·871	3·889	3·908	3·926	3·944	3·961	3·979	3·997	4·015	4·033
·29	4·052	4·071	4·090	4·109	4·129	4·148	4·167	4·186	4·205	4·224
·30	4·243	4·262	4·282	4·301	4·320	4·341	4·362	4·381	4·403	4·424
·31	4·445	4·464	4·485	4·506	4·527	4·547	4·569	4·590	4·610	4·631
·32	4·655	4·678	4·700	4·722	4·745	4·768	4·790	4·812	4·824	4·857
·33	4·881	4·904	4·928	4·951	4·977	5·004	5·030	5·055	5·080	5·106
·34	5·131	5·156	5·181	5·206	5·232	5·262	5·291	5·320	5·249	5·378
·35	5·407	5·436	5·464	5·492	5·522	5·554	5·580	5·622	5·657	5·691
·36	5·725	5·759	5·793	5·827	5·867	5·908	5·949	5·990	6·032	6·074
·37	6·116	6·165	6·218	6·271	6·322	6·373	6·431	6·500	6·570	6·642
·38	6·723	6·826	7·055	7·275	...	...	...	...	...	...

Eqn.	9	8	7	6	5	4	3	2	1	0
—	Moon's Anomaly in days.									
·38	...	...	...	...	...	...	7·275	7·582	7·701	7·812
·37	7·895	7·966	8·036	8·106	8·157	8·207	8·258	8·309	8·360	8·407
·36	8·447	8·487	8·527	8·566	8·604	8·643	8·680	8·716	8·749	8·783
·35	8·813	8·844	8·875	8·906	8·938	8·968	8·997	9·025	9·051	9·077
·34	9·103	9·130	9·156	9·184	9·211	9·238	9·261	9·285	9·309	9·333
·33	9·356	9·380	9·403	9·426	9·450	9·474	9·497	9·519	9·540	9·562
·32	9·583	9·603	9·623	9·644	9·665	9·686	9·707	9·728	9·748	9·768
·31	9·789	9·809	9·827	9·846	9·866	9·882	9·901	9·921	9·941	9·958
·30	9·977	9·996	10·015	10·033	10·052	10·070	10·087	10·104	10·122	10·139
·29	10·156	10·173	10·191	10·208	10·225	10·242	10·259	10·275	10·292	10·309
·28	10·326	10·342	10·359	10·375	10·391	10·407	10·423	10·438	10·454	10·469
·27	10·485	10·501	10·517	10·533	10·549	10·564	10·579	10·595	10·611	10·626
·26	10·641	10·656	10·671	10·686	10·701	10·715	10·730	10·744	10·758	10·773
·25	10·787	10·803	10·818	10·833	10·848	10·863	10·877	10·891	10·905	10·919
·24	10·933	10·946	10·960	10·974	10·988	11·002	11·016	11·030	11·044	11·058
·23	11·072	11·085	11·099	11·113	11·127	11·140	11·153	11·167	11·180	11·193
·22	11·206	11·220	11·233	11·245	11·258	11·272	11·285	11·298	11·311	11·324
·21	11·337	11·350	11·363	11·377	11·390	11·403	11·416	11·429	11·441	11·453
·20	11·466	11·478	11·490	11·503	11·516	11·528	11·540	11·553	11·566	11·579
·19	11·591	11·604	11·616	11·628	11·640	11·653	11·665	11·677	11·690	11·702
·18	11·714	11·726	11·738	11·750	11·761	11·773	11·785	11·797	11·809	11·821
·17	11·824	11·844	11·856	11·869	11·881	11·894	11·905	11·919	11·929	11·940
·16	11·953	11·964	11·975	11·986	11·998	12·010	12·021	12·033	12·044	12·056
·15	12·068	12·079	12·091	12·103	12·114	12·125	12·137	12·149	12·160	12·172
·14	12·183	12·194	12·206	12·217	12·228	12·240	12·251	12·263	12·274	12·285
·13	12·296	12·307	12·318	12·330	12·341	12·352	12·363	12·375	12·386	12·397
·12	12·408	12·420	12·431	12·442	12·453	12·464	12·475	12·486	12·497	12·508
·11	12·519	12·530	12·542	12·553	12·564	12·575	12·586	12·596	12·607	12·618
·10	12·628	12·639	12·650	12·661	12·672	12·684	12·695	12·706	12·717	12·728
·09	12·738	12·749	12·759	12·770	12·781	12·792	12·802	12·813	12·824	12·835
·08	12·846	12·856	12·867	12·877	12·888	12·899	12·910	12·920	12·931	12·942
·07	12·952	12·963	12·974	12·985	12·995	13·006	13·016	13·027	13·037	13·047
·06	13·058	13·069	13·079	13·090	13·100	13·111	13·122	13·132	13·143	13·153
·05	13·164	13·174	13·185	13·195	13·206	13·217	13·227	13·237	13·248	13·258
·04	13·269	13·279	13·290	13·301	13·311	13·321	13·332	13·342	13·352	13·363
·03	13·373	13·383	13·393	13·404	13·415	13·425	13·435	13·446	13·457	13·467
·02	13·477	13·487	13·497	13·508	13·518	13·528	13·538	13·549	13·560	13·570
·01	13·580	13·591	13·601	13·611	13·622	13·633	13·643	13·653	13·663	13·674
·00	13·684	13·694	13·705	13·716	13·726	13·736	13·747	13·757	13·767	13·777

Maximum equation ·382967 for Anomaly of 7·2752 days.

TABLE IX—(k)—For Nakshatras.

Moon's Anomaly and Moon's Equation of the Centre in days and fractions of a day.

SURYA SIDDHANTA.

Eqn. +	0	1	2	3	4	5	6	7	8	9
	Moon's Anomaly in days.									
·00	13·777	13·787	13·797	13·807	13·818	13·828	13·839	13·849	13·860	13·870
·01	13·880	13·891	13·902	13·912	13·922	13·932	13·943	13·953	13·963	13·974
·02	13·984	13·994	14·005	14·016	14·026	14·036	14·046	14·057	14·067	14·077
·03	14·087	14·098	14·108	14·119	14·129	14·139	14·150	14·161	14·171	14·181
·04	14·191	14·202	14·213	14·223	14·233	14·243	14·253	14·264	14·274	14·285
·05	14·296	14·306	14·317	14·328	14·338	14·348	14·359	14·369	14·380	14·390
·06	14·401	14·411	14·422	14·433	14·444	14·454	14·464	14·475	14·486	14·496
·07	14·507	14·517	14·527	14·538	14·548	14·559	14·569	14·580	14·591	14·602
·08	14·613	14·624	14·634	14·644	14·655	14·666	14·677	14·687	14·698	14·708
·09	14·719	14·730	14·741	14·752	14·762	14·773	14·784	14·795	14·805	14·816
·10	14·827	14·838	14·848	14·859	14·870	14·882	14·893	14·904	14·915	14·925
·11	14·936	14·947	14·958	14·968	14·979	14·990	15·001	15·012	15·024	15·035
·12	15·046	15·057	15·068	15·079	15·089	15·100	15·112	15·123	15·134	15·145
·13	15·157	15·168	15·180	15·191	15·202	15·213	15·224	15·236	15·247	15·258
·14	15·269	15·280	15·292	15·303	15·314	15·326	15·337	15·348	15·359	15·370
·15	15·382	15·394	15·405	15·417	15·428	15·439	15·450	15·462	15·474	15·486
·16	15·498	15·510	15·521	15·533	15·544	15·556	15·567	15·578	15·589	15·601
·17	15·613	15·625	15·637	15·649	15·661	15·673	15·685	15·697	15·709	15·721
·18	15·733	15·745	15·757	15·769	15·781	15·793	15·804	15·816	15·828	15·840
·19	15·852	15·864	15·876	15·888	15·901	15·914	15·926	15·938	15·950	15·963
·20	15·975	15·988	16·001	16·014	16·026	16·038	16·051	16·064	16·076	16·088
·21	16·101	16·113	16·125	16·138	16·151	16·164	16·177	16·191	16·204	16·217
·22	16·230	16·243	16·256	16·269	16·282	16·295	16·308	16·321	16·334	16·348
·23	16·361	16·374	16·387	16·401	16·414	16·427	16·441	16·455	16·469	16·483
·24	16·497	16·511	16·525	16·539	16·553	16·566	16·580	16·594	16·608	16·621
·25	16·635	16·649	16·663	16·677	16·691	16·706	16·721	16·736	16·751	16·766
·26	16·780	16·795	16·810	16·824	16·839	16·854	16·869	16·884	16·899	16·914
·27	16·929	16·944	16·959	16·975	16·990	17·005	17·021	17·037	17·053	17·068
·28	17·083	17·099	17·115	17·131	17·147	17·163	17·179	17·195	17·211	17·227
·29	17·244	17·261	17·278	17·295	17·312	17·329	17·346	17·363	17·381	17·398
·30	17·415	17·432	17·450	17·467	17·484	17·502	17·520	17·538	17·558	17·577
·31	17·596	17·615	17·634	17·653	17·671	17·689	17·708	17·727	17·746	17·765
·32	17·786	17·807	17·827	17·847	17·868	17·889	17·909	17·930	17·951	17·972
·33	17·993	18·014	18·035	18·057	18·080	18·104	18·128	18·151	18·175	18·199
·34	18·223	18·246	18·269	18·293	18·318	18·343	18·370	18·397	18·423	18·450
·35	18·477	18·504	18·530	18·557	18·586	18·615	18·648	18·680	18·711	18·742
·36	18·775	18·808	18·840	18·872	18·910	18·948	18·987	19·027	19·067	19·107
·37	19·147	19·191	19·240	19·289	19·337	19·386	19·450	19·516	19·580	19·654
·38	19·732	19·841	19·951	20·280	...	...	...	...	...	...

Maximum equation ·382967 for Anomaly of 20·2797 days.

Eqn. +	9	8	7	6	5	4	3	2	1	0
	Moon's Anomaly in days.									
·38	...	...	...	...	...	...	20·280	20·589	20·710	20·822
·37	20·907	20·984	21·057	21·128	21·181	21·233	21·285	21·336	21·389	21·442
·36	21·480	21·522	21·564	21·604	21·643	21·682	21·720	21·759	21·795	21·829
·35	21·865	21·896	21·930	21·963	21·996	22·031	22·062	22·091	22·119	22·147
·34	22·176	22·204	22·233	22·263	22·292	22·321	22·347	22·373	22·399	22·424
·33	22·449	22·474	22·501	22·526	22·550	22·575	22·600	22·625	22·650	22·673
·32	22·696	22·719	22·742	22·765	22·787	22·809	22·832	22·855	22·877	22·899
·31	22·922	22·944	22·965	22·986	23·007	23·028	23·048	23·068	23·089	23·109
·30	23·130	23·151	23·172	23·192	23·213	23·234	23·253	23·272	23·292	23·311
·29	23·329	23·348	23·367	23·386	23·405	23·425	23·444	23·463	23·482	23·501
·28	23·520	23·538	23·557	23·575	23·594	23·612	23·629	23·646	23·664	23·681
·27	23·699	23·717	23·735	23·753	23·771	23·789	23·806	23·824	23·841	23·858
·26	23·875	23·892	23·909	23·926	23·942	23·959	23·977	23·993	24·010	24·027
·25	24·044	24·030	24·077	24·093	24·109	24·126	24·142	24·158	24·175	24·191
·24	24·207	24·223	24·239	24·255	24·271	24·287	24·303	24·318	24·333	24·349
·23	24·366	24·382	24·397	24·413	24·430	24·446	24·461	24·476	24·492	24·507
·22	24·521	24·536	24·551	24·566	24·581	24·596	24·611	24·626	24·642	24·657
·21	24·673	24·688	24·703	24·718	24·732	24·747	24·763	24·778	24·792	24·806
·20	24·821	24·836	24·850	24·865	24·880	24·894	24·908	24·923	24·937	24·951
·19	24·965	24·980	24·995	25·009	25·024	25·039	25·053	25·067	25·082	25·096
·18	25·110	25·124	25·138	25·151	25·164	25·178	25·193	25·207	25·221	25·235
·17	25·249	25·263	25·277	25·291	25·305	25·319	25·332	25·346	25·360	25·374
·16	25·388	25·402	25·416	25·429	25·443	25·457	25·470	25·484	25·497	25·511
·15	25·524	25·537	25·551	25·565	25·578	25·591	25·605	25·619	25·633	25·647
·14	25·660	25·673	25·687	25·700	25·713	25·726	25·739	25·752	25·766	25·779
·13	25·792	25·805	25·819	25·833	25·846	25·859	25·873	25·886	25·898	25·911
·12	25·924	25·938	25·951	25·965	25·979	25·992	26·005	26·018	26·031	26·044
·11	26·056	26·069	26·082	26·095	26·108	26·121	26·134	26·147	26·160	26·173
·10	26·186	26·199	26·212	26·225	26·238	26·250	26·263	26·276	26·289	26·302
·09	26·315	26·328	26·341	26·354	26·367	26·379	26·392	26·405	26·418	26·430
·08	26·443	26·455	26·468	26·480	26·493	26·507	26·519	26·531	26·544	26·557
·07	26·570	26·583	26·595	26·608	26·620	26·633	26·645	26·658	26·670	26·683
·06	26·696	26·709	26·721	26·734	26·747	26·759	26·771	26·783	26·796	26·808
·05	26·821	26·834	26·847	26·859	26·872	26·884	26·896	26·909	26·922	26·934
·04	26·946	26·959	26·972	26·984	26·996	27·009	27·021	27·033	27·046	27·060
·03	27·072	27·084	27·096	27·108	27·120	27·132	27·145	27·158	27·171	27·183
·02	27·195	27·207	27·219	27·232	27·245	27·257	27·269	27·282	27·294	27·306
·01	27·318	27·331	27·343	27·355	27·368	27·381	27·393	27·406	27·418	27·431
·00	27·443	27·455	27·467	27·480	27·492	27·504	27·517	27·529	27·542	27·555

TABLE IX—(*l*)—For Nakshatras.

Moon's Anomaly and Equation of the Centre in Days, Ghatikas and Palas.

SURYA SIDDHANTA.

Eqn. Palas. — / Ghat.	0 d. g. p.	10 d. g. p.	20 d. g. p.	30 d. g. p.	40 d. g. p.	50 d. g. p.
0	...	2 5	4 10	6 10	8 15	10 15
1	12 25	14 30	16 30	18 35	20 40	22 40
2	24 50	26 45	28 50	31 0	33 0	35 10
3	37 10	39 20	41 20	43 25	45 35	47 40
4	49 45	51 45	53 55	56 5	58 5	1 0 10
5	1 2 20	1 4 30	1 6 35	1 8 45	1 10 45	1 13 0
6	1 15 5	1 17 20	1 19 20	1 21 35	1 23 45	1 25 55
7	1 28 5	1 30 10	1 32 20	1 34 30	1 36 45	1 38 55
8	1 41 5	1 43 20	1 45 35	1 47 55	1 50 0	1 52 10
9	1 54 25	1 56 45	1 59 0	2 1 15	2 3 30	2 5 45
10	2 8 5	2 10 15	2 12 35	2 14 55	2 17 20	2 19 35
11	2 21 55	2 24 15	2 26 35	2 28 55	2 31 15	2 33 40
12	2 36 10	2 38 35	2 40 55	2 43 20	2 45 50	2 48 20
13	2 50 45	2 53 15	2 55 50	2 58 25	3 0 55	3 3 20
14	3 5 55	3 8 30	3 11 5	3 13 50	3 15 50	3 19 25
15	3 21 45	3 24 25	3 27 10	3 30 0	3 32 55	3 35 35
16	3 38 25	3 41 10	3 44 5	3 47 0	3 50 0	3 52 55
17	3 55 55	3 58 50	4 1 50	4 5 5	4 8 15	4 11 25
18	4 13 30	4 17 50	4 21 5	4 24 35	4 28 0	4 31 30
19	4 35 0	4 38 30	4 42 15	4 46 5	4 49 50	4 53 35
20	4 57 35	5 1 54	5 6 10	5 10 25	5 14 40	5 19 0
21	5 24 25	5 29 15	5 34 15	5 40 0	5 45 45	5 51 55
22	5 58 40	65 20	6 13 45	6 22 25	6 33 35	6 47 0
23	7 16 30	...	...	...	...	...

Maximum equation 22 ghat 59 palas for Anomaly of 17 days 16 ghatikas 31 palas.

Eqn. + / Ghat.	0 d. g. p.	10 d. g. p.	20 d. g. p.	30 d. g. p.	40 d. g. p.	50 d. g. p.
0	...	13 48 20	13 50 5	13 51 50	13 53 30	13 55 15
1	13 57 0	13 58 40	14 0 25	14 2 10	14 3 55	14 5 35
2	14 7 20	14 9 5	14 10 50	14 12 35	14 14 15	14 16 0
3	14 17 45	14 19 35	14 21 15	14 23 0	14 24 45	14 26 35
4	14 28 20	14 30 0	14 31 45	14 33 35	14 35 20	14 37 5
5	14 38 50	14 40 40	14 42 25	14 44 20	14 46 0	14 47 50
6	14 49 35	14 51 25	14 53 15	14 55 5	14 56 55	14 58 40
7	15 0 35	15 2 25	15 4 15	15 6 0	15 7 55	15 9 45
8	15 11 40	15 13 30	15 15 25	15 17 20	15 19 5	15 21 0
9	15 22 55	15 24 50	15 26 45	15 28 40	15 30 40	15 32 30
10	15 34 30	15 36 25	15 38 20	15 40 25	15 42 25	15 44 20
11	15 46 20	15 48 20	15 50 20	15 52 25	15 54 25	15 56 25
12	15 58 30	16 0 40	16 2 40	16 4 45	16 6 50	16 9 0
13	16 11 15	16 13 15	16 15 35	16 17 45	16 19 55	16 22 0
14	16 24 20	16 26 35	16 28 55	16 31 15	16 33 35	16 35 50
15	16 38 5	16 40 25	16 42 50	16 45 25	16 47 50	16 50 20
16	16 52 40	16 55 10	16 57 45	17 0 20	17 2 55	17 5 35
17	17 8 10	17 10 55	17 13 30	17 16 25	17 19 15	17 22 0
18	17 24 55	17 27 50	17 30 45	17 33 50	17 36 55	17 40 10
19	17 43 20	17 46 25	17 49 55	17 53 20	17 56 50	18 0 10
20	18 3 50	18 7 50	18 11 45	18 15 45	18 19 40	18 24 0
21	18 28 25	18 33 10	18 37 55	18 43 20	18 48 40	18 54 25
22	19 0 55	19 7 20	19 15 20	19 23 35	19 34 25	19 47 30
23	20 16 50	...	...	...	...	...

Maximum equation 22 ghat 59 palas for Anomaly of 20 days 16 ghatikas 47 palas.

Eqn. Palas. — / Ghat.	50 d. g. p.	40 d. g. p.	30 d. g. p.	20 d. g. p.	10 d. g. p.	0 d. g. p.
23	...	...	...	...	...	7 16 30
22	7 46 0	7 58 55	8 9 40	8 16 55	8 25 50	8 32 30
21	8 38 50	8 44 30	8 49 50	8 55 25	9 0 10	9 4 40
20	9 9 5	9 13 40	9 17 30	9 21 30	9 25 25	9 29 30
19	9 33 5	9 36 25	9 39 55	9 43 25	9 46 55	9 49 55
18	9 53 5	9 56 25	9 59 25	10 2 30	10 5 25	10 8 20
17	10 11 20	10 14 5	10 16 50	10 19 45	10 22 25	10 25 5
16	10 27 40	10 30 20	10 32 55	10 35 30	10 38 5	10 40 35
15	10 43 0	10 45 25	10 47 55	10 50 25	10 52 50	10 55 10
14	10 57 25	10 59 45	11 2 5	11 4 25	11 6 40	11 8 55
13	11 11 15	11 13 20	11 15 30	11 17 40	11 20 0	11 22 0
12	11 24 15	11 26 25	11 28 30	11 30 35	11 32 30	11 34 45
11	11 36 50	11 38 55	11 40 55	11 42 55	11 44 55	11 46 55
10	11 48 55	11 50 50	11 52 55	11 54 55	11 56 55	11 58 45
9	12 0 45	12 2 35	12 4 35	12 6 30	12 8 25	12 10 20
8	12 12 15	12 14 10	12 16 0	12 17 55	12 19 45	12 21 40
7	12 23 30	11 25 25	12 27 15	12 29 5	12 30 50	12 32 45
6	12 34 35	12 36 25	12 38 10	12 40 0	12 41 50	12 43 40
5	12 45 25	22 47 20	12 49 0	12 50 50	12 52 35	12 54 25
4	12 56 10	12 57 55	12 59 45	13 1 30	13 3 15	13 4 55
3	13 6 40	13 8 30	13 10 15	13 12 0	13 13 40	13 15 30
2	13 17 20	13 19 0	13 20 0	13 22 25	13 24 10	13 25 55
1	13 27 40	13 29 20	13 31 5	13 32 50	13 34 35	13 36 15
0	13 38 5	13 39 45	13 41 30	13 43 15	13 44 55	...

Eqn. + / Ghat.	50 d. g. p.	40 d. g. p.	30 d. g. p.	20 d. g. p.	10 d. g. p.	0 d. g. p.
23	...	...	...	...	...	20 16 50
22	20 46 40	20 59 45	21 10 50	21 19 30	21 27 50	21 34 40
21	21 41 25	21 47 30	21 53 5	21 59 5	22 4 0	22 8 50
20	22 13 40	22 18 40	22 22 50	22 27 0	22 31 15	22 35 45
19	22 39 40	22 43 25	22 47 5	22 51 5	22 54 45	22 58 15
18	23 1 45	23 5 20	23 8 45	23 12 10	23 15 25	23 18 40
17	23 21 50	23 25 0	23 29 20	23 31 25	23 34 25	23 37 15
16	23 40 15	23 43 20	23 46 15	23 49 15	23 52 5	23 54 55
15	23 57 35	24 0 25	24 3 15	24 6 0	24 8 50	24 11 30
14	24 14 10	24 16 50	24 19 25	24 22 5	24 24 45	24 27 25
13	24 30 0	24 32 20	24 34 55	24 37 25	24 40 5	24 42 30
12	24 44 50	24 47 25	24 49 55	24 52 25	24 54 40	24 57 5
11	24 59 35	25 1 55	25 4 20	25 6 40	25 9 0	25 11 20
10	25 13 40	25 15 55	25 18 25	25 20 40	25 23 0	25 25 10
9	25 27 35	25 28 55	25 32 0	25 34 15	25 36 35	25 38 50
8	25 41 5	25 43 15	25 45 25	25 47 45	25 49 55	25 52 10
7	25 54 20	25 56 30	25 58 40	26 0 55	26 3 5	26 5 10
6	26 7 25	26 9 35	26 11 45	26 13 55	26 16 0	26 18 10
5	26 20 20	26 22 30	26 24 35	26 26 40	26 28 40	26 31 0
4	26 33 5	26 35 10	26 37 15	26 39 25	26 41 30	26 43 30
3	26 45 35	26 47 45	26 49 50	26 51 55	26 53 55	26 56 5
2	26 58 10	27 0 15	27 2 20	27 4 25	27 6 30	27 8 30
1	27 10 40	27 12 35	27 14 45	27 16 50	27 18 50	27 20 50
0	27 23 0	27 25 0	27 27 10	27 29 5	27 31 15	...

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	Christian Era.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
								⊙'s Anom col. 5	+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235							
								☾'s Anom col. 6	+ 1·976				+ 3·952				+ 5·928				+ 7·904							
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
							B. C.																					
3101	57		13M	·9831	9·9981	22·736	1	5	3	Mr	23	·98	5	Ap	22	·51	7	My	22	·04	1	Je	20○	·57	3	Jl	20	·10
							A.D.																					
3102	58		14M	·2419	28·6370	20·870	1	7	2	Ap	11	·88	4	My	11	·41	5	Je	9●○	·94	7	Jl	9	·47	2	Au	8	·00
3103	59		14M	·5006	17·7453	17·027	2	1	7	Ap	1	·25	1	Ap	30○	78	3	My	30	·31	4	Je	28	·84	6	Jl	28	·37
3104	60		14M	·7594	6·8536	13·184	3	2	4	Mr	21	·61	6	Ap	20○	·14	7	My	19	·67	{ 2	Je	18	·20	5	Au	16	·27
																					{ 3	Jl	17	·73				
3105	61		14M	·0181	25·4925	11·317	4	3	3	Ap	8●○	·51	5	My	8	·04	6	Je	6	·57	1	Jl	6	·10	2	Au	4	·63
3106	62		14M	·2769	14·6008	7·475	5	5	7	Mr	28●	·88	2	Ap	27	·41	3	My	26	·94	5	Je	25	·47	7	Jl	25	·00
3107	63		14M	·5356	3·7091	3·633	6	6	5	Mr	18	·24	6	Ap	16	·77	{ 1	My	16	·31	4	Jl	14	·37	5	Au	12○	·90
																	{ 2	Je	14	·84								
3108	64		14M	·7944	22·3479	1·765	7	7	4	Ap	6	·14	5	My	5	·67	7	Je	4	·20	1	Jl	3	·73	3	Au	2○	·26
3109	65		14M	·0531	11·4562	25·477	8	1	1	Mr	25	·51	3	Ap	24	·04	4	My	23	·57	6	Je	22	·10	7	Jl	21○	·63
3110	66		14M	·3119	0·5645	21·634	9	3	{ 5	Mr	14	·88	1	My	12	·94	3	Je	11	·47	5	Jl	11●	·00	6	Au	9	·53
									{ 7	Ap	13	·41																
3111	67		14M	·5707	19·2034	19·767	10	4	4	Ap	2	·77	6	My	2	·30	7	My	31○	·83	2	Je	30●	·37	3	Jl	29	·90
3112	68		14M	·8294	8·3117	15·925	11	5	2	Mr	23	·14	3	Ap	21	·67	5	My	21○	·20	6	Je	19	·73	{ 1	Jl	19	·26
																									{ 2	Au	17	·79
3113	69		14M	·0882	26·9506	14·058	12	6	1	Ap	10	·04	2	My	9●	·57	4	Je	8	·10	5	Jl	7	·63	7	Au	6	·16
3114	70		14M	·3469	16·0589	10·215	13	1	5	Mr	30○	·41	6	Ap	28●	·94	1	My	28	·47	3	Je	27	·00	4	Jl	26	·53
3115	71		14M	·6057	5·1672	6·373	14	2	2	Mr	19○	·77	4	Ap	18●	·30	{ 5	My	17	·83	1	Jl	15	·89	3	Au	14	·43
																	{ 7	Je	16	·36								
3116	72		14M	·8644	23·8061	4·506	15	3	1	Ap	7	·67	3	My	7	·20	4	Je	5	·73	6	Jl	5	·26	7	Au	3	·79
3117	73		14M	·1232	12·9144	0·663	16	4	6	Mr	27	·04	7	Ap	25	·57	2	My	25	·10	3	Je	23	·63	5	Jl	23	·16
3118	74		14M	·3820	2·0227	24·375	17	6	3	Mr	16	·40	{ 4	Ap	14	·93	1	Je	13	·00	2	Jl	12○	·53	4	Au	11	·06
													{ 6	My	14	·47												
3119	75		14M	·6407	20·6616	22·508	18	7	2	Ap	4	·30	3	My	3	·83	5	Je	2	·36	6	Jl	1●○	·89	1	Jl	31	·42
3120	76		14M	·8995	9·7699	18·665	19	1	6	Mr	24	·67	1	Ap	23	·20	2	My	22	·73	4	Je	21●○	·26	5	Jl	20	·79
3121	77		14M	·1582	28·4088	16·799	20	2	5	Ap	11	·57	7	My	11○	·10	1	Je	9●	·63	3	Jl	9	·16	4	Au	7	·69
3122	78		14M	·4170	17·5171	12·956	21	4	2	Mr	31	·93	4	Ap	30○	·46	5	My	29	·99	7	Je	28	·53	2	Jl	28	·06
3123	79		14M	·6757	6·6254	9·113	22	5	7	Mr	21	·30	1	Ap	19●○	83	3	My	19	·36	{ 4	Je	17	·89	7	Au	15	·95
																					{ 6	Jl	17	·42				
3124	80		14M	·9345	25·2647	7·246	23	6	6	Ap	9	·20	7	My	8	·73	2	Je	7	·26	3	Jl	6	·79	5	Au	5	·32
3125	81		14M	·1932	14·3726	3·404	24	7	3	Mr	28	·57	5	Ap	27	·10	6	My	26	·63	1	Je	25	·16	2	Jl	24	·69
3126	82		14M	·4520	3·4809	27·115	25	2	7	Mr	17	·93	2	Ap	16	·46	{ 3	My	15	·99	7	Jl	14	·05	1	Au	12○	·59
																	{ 5	Je	14	·52								
3127	83		14M	·7108	22·1197	25·2	26	3	6	Ap	5	·83	1	My	5	·36	2	Je	3	·89	4	Jl	3	·42	5	Au	1○	·95
3128	84		14M	·9695	11·2280	21·[illegible]	27	4	4	Mr	26	·20	5	Ap	24	·73	7	My	24	·26	1	Je	22	·79	3	Jl	22●	·32
3129	85		14M	·2283	0·3363	17·563	28	5	{ 1	Mr	14	·56	4	My	12	·63	6	Je	11○	·16	7	Jl	10●	·69	2	Au	9	·22
									{ 3	Ap	13	·09																
3130	86		14M	·4870	18·9752	15·696	29	7	7	Ap	2	·46	1	My	1	·99	3	My	31○	·52	5	Je	30	·05	6	Jl	29	·58
3131	87		14M	·7458	8·0835	11·854	30	1	4	Mr	22	·83	6	Ap	21	·36	7	My	20●○	·89	2	Je	19	·42	{ 3	Jl	18	·95
																									{ 5	Au	17	·48
3132	88		15M	·0045	26·7224	9·987	31	2	3	Ap	10○	·73	5	My	10●	·26	6	Je	8	·79	1	Jl	8	·32	2	Au	6	·85
3133	89		14M	·2633	15·8307	6·144	32	3	1	Mr	30○	·09	2	Ap	28●	·62	4	My	28	·15	5	Je	26	·69	7	Jl	26	·22
3134	90		14M	·5221	4·9390	2·301	33	5	5	Mr	19○	·46	6	Ap	17	·99	{ 1	My	17	·52	4	Jl	15	·58	6	Au	14	·11
																	{ 3	Je	16	·05								
3135	91		14M	·7808	23·5779	0·435	34	6	4	Ap	7	·36	5	My	6	·89	7	Je	5	·42	1	Jl	4	·95	3	Au	3	·48
3136	92		15M	·0396	12·6862	24·146	35	7	1	Mr	27	·73	3	Ap	26	·26	4	My	25	·79	6	Je	24	·32	7	Jl	23○	·85
3137	93		14M	·2983	1·7945	20·304	36	1	6	Mr	16	·09	{ 7	Ap	14	·62	3	Je	12	·68	5	Jl	12●○	·21	6	Au	10	·75
													{ 2	My	14	·15												
3138	94		14M	·5571	20·4334	18·437	37	3	4	Ap	3	·99	6	My	3	·52	1	Je	2	·05	2	Jl	1●○	·58	4	Jl	31	·11
3139	95		14M	·8158	9·5417	14·594	38	4	2	Mr	24	·36	3	Ap	22	·89	5	My	22	·42	6	Je	20●	·95	1	Jl	20	·48

Solar years and New moons from B.C. 1 to A.D. 2000 (Surya Siddhanta).*

+ 147·65293 | + 177·18353 | + 206·71411 | + 236·24470 | + 265·77529 | + 295·30588 | { +324·83647 / +354·36705

+ 9·880 | + 11·856 | + 13·832 | + 15·808 | + 17·784 | + 19·760 | { + 21·736 / + 23·712

Asvina			Kartika			Margasira			Pausha			A.D.	Magha			A.D.	Phalguna			Chaitra		
Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction		Week-day Month	Day	Fraction		Week-day Month	Day	Fraction	Week-day Month	Day	Fraction
{4 Au	18	·63	7 O	16	·69	2 N	15	·23	Pausha. Kshaya.				3 D	14○	·76	1	5 Jr	13	·29	{6 F	11	·82
{6 S	17	·16																		{1 Mr	13	·35
3 S	6	·53	5 O	6	·06	6 N	4	·59	1 D	4	·12	2	2 Jr	2	·65		4 F	1	·18	5 Mr	2	·71
7 Au	26	·90	2 S	25	·43	3 O	24○	·96	5 N	23●	·49		7 D	23	·02	3	1 Jr	21	·55	3 F	20	·08
6 S	14	·80	1 O	14○	·33	2 N	12	·86	4 D	12	·39	4	5 Jr	10	·92		7 F	9	·45	1 Mr	9	·98
4 S	3	·16	5 O	2○	·69	7 N	1	·22	1 N	30	·75		3 D	30	·29	5	4 Jr	28	·82	6 F	27	·35
1 Au	23	·53	3 S	22●	·06	4 O	21	·59	6 N	20	·12		7 D	19	·65	6	2 Jr	18	·18	3 F	16○	·71
7 S	11●	·43	1 O	10	·96	3 N	9	·49	5 D	9	·02	7	6 Jr	7	·55		1 F	6●○	·08	2 Mr	7	·61
4 Au	31●	·79	6 S	30	·33	7 O	29	·86	2 N	28	·39		3 D	27	·92	8	5 Jr	26●○	·45	6 F	24	·98
2 Au	20	·16	3 S	18	·69	5 O	18	·22	6 N	16	·75		1 D	16	·28	9	2 Jr	14●	·81	4 F	13	·35
1 S	8	·06	2 O	7	·59	4 N	6	·12	5 D	5○	·65	10	7 Jr	4	·18		1 F	2	·71	3 Mr	4	·24
5 Au	28	·43	6 S	26	·96	1 O	26	·49	3 N	25●○	·02		4 D	24	·55	11	6 Jr	23	·08	7 F	21	·61
4 S	16	·32	5 O	15	·85	7 N	14●○	·39	1 D	13	·92	12	3 Jr	12	·45		4 F	10	·98	6 Mr	11	·51
1 S	4	·69	3 O	4	·22	4 N	2	·75	6 D	2	·28		7 D	31	·81	13	2 Jr	30	·34	3 F	28	·87
6 Au	25	·06	7 S	23○	·59	2 O	23	·12	3 N	21	·65		5 D	21	·18	14	6 Jr	19	·71	1 F	18	·24
4 S	12○	·96	6 O	12	·49	1 N	11	·02	2 D	10	·55	15	4 Jr	9	·08		5 F	7	·61	7 Mr	9○	·14
2 S	2●○	·32	3 O	1	·85	5 O	31	·38	6 N	29	·91		1 D	29	·45	16	2 Jr	27	·98	4 F	26	·51
6 Au	21●	·69	1 S	20	·22	2 O	19	·75	4 N	18	·28		5 D	17	·81	17	7 Jr	16○	·34	1 F	14●	·87
5 S	9	·59	7 O	9	·12	1 N	7	·65	3 D	7	·18	18	4 Jr	5○	·71		6 F	4	·24	7 Mr	5	·77
2 Au	29	·95	4 S	28	·49	6 O	28	·02	7 N	26	·55		2 D	26○	·08	19	3 Jr	24	·61	5 F	23	·14
{7 Au	19	·32	3 O	17	·38	4 N	15	·91	6 D	15●	·44	20	7 Jr	13	·97		2 F	12	·51	4 Mr	13	·04
{1 S	17	·85																				
6 S	6	·22	7 O	5	·75	2 N	4○	·28	3 D	3●	·81	21	5 Jr	2	·34		6 Jr	31	·87	1 Mr	2	·40
3 Au	26	·59	5 S	25	·12	6 O	24○	·65	1 N	23●	·18		2 D	22	·71	22	4 Jr	21	·24	5 F	19	·77
2 S	14	·48	4 O	14○	·01	5 N	12	·55	7 D	12	·08	23	1 Jr	10	·61		3 F	9	·14	4 Mr	10	·67
6 S	3	·85	1 O	3	·38	2 N	1	·91	4 D	1	·44		5 D	30	·97	24	7 Jr	29	·50	2 F	28○	·03
4 Au	23○	·22	5 S	21●	·75	7 O	21	·28	1 N	19	·81		3 D	19	·34	25	4 Jr	17	·87	6 F	16○	·40
3 S	11●	·12	4 O	10	·65	6 N	9	·18	7 D	8	·71	26	2 Jr	7	·24		3 F	5●○	·77	5 Mr	7	·30
7 Au	31	·48	2 S	30	·01	3 O	29	·54	5 N	28	·07		6 D	27	·61	27	1 Jr	26●	·14	2 F	24	·67
4 Au	20	·85	6 S	19	·38	7 O	18	·91	2 N	17	·44		3 D	16○	·97	28	5 Jr	15	·50	7 F	14	·03
3 S	7	·75	5 O	7	·28	6 N	5	·81	1 D	5○	·34	29	2 Jr	3	·87		4 F	2	·40	5 Mr	3	·93
1 Au	28	·11	2 S	26	·65	4 O	26	·18	5 N	24●○	·71		7 D	24	·24	30	1 Jr	22	·77	3 F	21	·30
7 S	16	·01	1 O	15	·54	3 N	14●	·07	4 D	13	·60	31	6 Jr	12	·13		7 F	10	·67	2 Mr	12	·20
4 S	5	·38	5 O	4○	·91	7 N	3	·44	1 D	2	·97	32	3 Jr	1	·50		5 Jr	31	·03	6 F	29	·56
1 Au	24	·75	3 S	23○	·28	4 O	22	·81	6 N	21	·34		7 D	20	·87	33	2 Jr	19	·40	3 F	17	·93
7 S	12●○	·64	2 O	12	·17	3 N	10	·71	5 D	10	·24	34	6 Jr	8	·77		1 F	7	·30	2 Mr	8●	·83
5 S	2●	·01	6 O	1	·54	1 O	31	·07	2 N	29	·60		4 D	29	·13	35	5 Jr	27○	·66	7 F	26	·19
2 Au	22	·38	3 S	20	·91	5 O	20	·44	6 N	18	·97		1 D	18	·30	36	3 Jr	17○	·03	4 F	15●	·56
1 S	9	·28	2 O	8	·81	4 N	7	·34	5 D	6	·87	37	7 Jr	5○	·40		1 F	3	·93	3 Mr	5	·46
5 Au	29	·64	7 S	28	·17	1 O	27	·70	3 N	26	·23		4 D	25●	·77	38	6 Jr	24	·30	7 F	22	·83
{3 Au	19	·01	6 O	17	·07	7 N	15○	·60	2 D	15	·13	39	3 Jr	13	·66		5 F	12	·19	6 Mr	13	·72
{4 S	17	·54																				

* From A.D. 500 to A.D. 999 Arya Siddhanta figures have been given in detail, while Surya Siddhanta figures for the same period are given in abstract at pages 76—79 below.

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	⊙'s Anom col. 5				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 6				+ 1·976				+ 3·952				+ 5·929				+ 7·904			
									Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3140	96		15M	·0746	28·1806	12·727	39	5	1	Ap	12	·25	2	My	11○	·79	4	Je	10	·32	5	Jl	9	·85	7	Au	8	·38
3141	97		14M	·3334	17·2889	8·885	40	6	5	Mr	31	·62	7	Ap	30●○	·15	1	My	29	·68	3	Je	28	·21	4	Jl	27	·74
3142	98		14M	·5921	6·3972	5·043	41	1	2	Mr	20	·99	4	Ap	19●	·52	6	My	19	·05	7	Je	17	·58	3	Au	15	·64
																					2	Jl	17	·11				
3143	99		14M	·8509	25·0361	3·175	42	2	1	Ap	8	·89	3	My	8	·42	4	Je	6	·95	6	Jl	6	·48	1	Au	5	·01
3144	100		15M	·1096	14·1443	26·887	43	3	6	Mr	29	·25	7	Ap	27	·78	2	My	27	·31	3	Je	25	·85	5	Jl	25	·38
3145	101		14M	·3684	3·2526	23·044	44	4	3	Mr	17	·62	5	Ap	16	·15	6	My	15	·68	2	Jl	13	·74	4	Au	12○	·27
																	1	Je	14	·21								
3146	102		14M	·6271	21·8915	21·178	45	6	2	Ap	5	·52	4	My	5	·05	5	Je	3	·58	7	Jl	3	·11	1	Au	1●	·64
3147	103		14M	·8859	10·9998	17·335	46	7	6	Mr	25	·88	1	Ap	24	·42	2	My	23	·95	4	Je	22○	·48	6	Jl	22●	·01
3148	104		15M	·1446	0·1081	13·493	47	1	4	Mr	15	·25	7	My	13	·31	1	Je	11○	·84	3	Jl	11	·37	4	Au	9	·91
									5	Ap	13	·78																
3149	105		14M	·4034	18·7470	11·625	48	2	3	Ap	2	·15	4	My	1	·68	6	My	31●○	·21	7	Je	29	·74	2	Jl	29	·27
3150	106		14M	·6622	7·8553	7·783	49	4	7	Mr	22	·52	2	Ap	21○	·05	3	My	20●	·58	5	Je	19	·11	6	Jl	18	·64
																									1	Au	17	·17
3151	107		14M	·9209	26·4942	5·916	50	5	6	Ap	10○	·41	7	My	9●	·95	2	Je	8	·48	4	Jl	8	·01	5	Au	6	·54
3152	108		15M	·1797	15·6025	2·073	51	6	3	Mr	30○	·78	5	Ap	29	·31	6	My	28	·84	1	Je	27	·37	2	Jl	26	·90
3153	109		14M	·4384	4·7108	25·785	52	7	1	Mr	19●	·15	2	Ap	17	·68	4	My	17	·21	7	Jl	15	·27	1	Au	13	·80
																	5	Je	15	·74								
3154	110		14M	·6972	23·3497	23·918	53	2	7	Ap	7	·05	1	My	6	·58	3	Je	5	·11	4	Jl	4	·64	6	Au	3○	·17
3155	111		14M	·9559	12·4580	20·075	54	3	4	Mr	27	·41	5	Ap	25	·94	7	My	25	·47	2	Je	24	·01	3	Jl	23●○	·54
3156	112		15M	·2147	1·5663	16·233	55	4	1	Mr	16	·78	3	Ap	15	·31	6	Je	13	·37	7	Jl	12●○	·90	2	Au	11	·43
													4	My	14	·84												
3157	113		14M	·4735	20·2052	14·366	56	5	7	Ap	3	68	2	My	3	·21	3	Je	1	·74	5	Jl	1●	·27	6	Jl	30	·80
3158	114		14M	·7322	9·3135	10·523	57	7	5	Mr	24	·05	6	Ap	22	·58	1	My	22○	·11	2	Je	20	·64	4	Jl	20	·17
3159	115		14M	·9910	27·9524	8·656	58	1	3	Ap	11	·94	5	My	11●○	·47	7	Je	10	·00	1	Jl	9	·53	3	Au	8	·07
3160	116		15M	·2497	17·0607	4·814	59	2	1	Ap	1	·31	2	Ap	30●	·84	4	My	30	·37	5	Je	28	·90	7	Jl	28	·43
3161	117		14M	·5085	6·1690	0·971	60	3	5	Mr	20○	·68	7	Ap	19	·21	1	My	18	·74	3	Je	17	·27	6	Au	15	·33
																					4	Jl	16	·80				
3162	118		14M	·7672	24·8078	26·659	61	5	4	Ap	8	·57	6	My	8	·11	7	Je	6	·64	2	Jl	6	·17	3	Au	4	·70
3163	119		15M	·0260	13·9161	22·816	62	6	1	Mr	28	·94	3	Ap	27	·47	5	My	27	·00	6	Je	25	·53	1	Jl	25	·06
3164	120		15M	·2848	3·0244	18·973	63	7	6	Mr	18	·31	7	Ap	16	·84	2	My	16	·37	5	Jl	14	·43	6	Au	12	·96
																	3	Je	14	·90								
3165	121		14M	·5435	21·6633	17·107	64	1	5	Ap	5	·21	6	My	4	·74	1	Je	3	·27	2	Jl	2○	·80	4	Au	1●	·33
3166	122		14M	·8023	10·7716	13·264	65	3	2	Mr	25	·57	4	Ap	24	·10	5	My	23	·63	7	Je	22○	·17	1	Jl	21	·70
3167	123		15M	·0610	29·4105	11·397	66	4	1	Ap	13	·47	3	My	13	·00	4	Je	11○	·53	6	Jl	11	·06	7	Au	9	·59
3168	124		15M	·3198	18·5188	7·554	67	5	5	Ap	2	·84	7	My	2○	·37	1	My	31●	·90	3	Je	30	·43	4	Jl	29	·96
3169	125		14M	·5785	7·6271	3·712	68	6	3	Mr	22	·21	4	Ap	20○	·74	6	My	20●	·27	7	Je	18	·80	3	Au	16	·86
																					2	Jl	18	·33				
3170	126		14M	·8373	26·2660	1·845	69	1	2	Ap	10○	·10	3	My	9	·63	5	Je	8	·16	6	Jl	7	·69	1	Au	6	·22
3171	127		15M	·0960	15·3743	25·557	70	2	6	Mr	30	·47	1	Ap	29	·00	2	My	28	·53	4	Je	27	·06	5	Jl	26	·59
3172	128		15M	·3548	4·4826	21·714	71	3	3	Mr	19●	·84	5	Ap	18	·37	6	My	17	·90	2	Jl	15	·96	4	Au	14○	·49
																	1	Je	16	·43								
3173	129		14M	·6136	23·1215	19·847	72	4	2	Ap	6	·73	4	My	6	·27	5	Je	4	·80	7	Jl	4	·33	1	Au	2●○	·86
3174	130		14M	·8723	12·2298	16·004	73	6	7	Mr	27	·10	1	Ap	25	·63	3	My	25	·16	4	Je	23	·69	6	Jl	23●○	·22
3175	131		15M	·1311	1·3381	12·163	74	7	4	Mr	16	·47	6	Ap	15	·00	2	Je	13	·06	3	Jl	12●	·59	5	Au	11	·12
													7	My	14	·53												
3176	132		15M	·3898	19·9770	10·295	75	1	3	Ap	4	·37	4	My	3	·90	6	Je	2○	·43	7	Jl	1	·96	2	Jl	31	·49
3177	133		14M	·6486	9·0853	6·452	76	2	7	Mr	23	·73	2	Ap	22	·26	3	My	21●○	·79	5	Je	20	·33	6	Jl	19	·86
3178	134		14M	·9073	27·7242	4·585	77	4	6	Ap	11	·63	1	My	11	·16	2	Je	9	·69	4	Jl	9	·22	5	Au	7	·72
3179	135		15M	·1661	16·8325	0·743	78	5	4	Ap	1○	·00	5	Ap	30●	·53	7	My	30	·06	1	Je	28	·59	3	Jl	28	·12

Surya Siddhanta.

Asvina			Kartika			Margasira			Pausha			A.D.	Magha			A.D.	Phalguna			Chaitra		
+ 147·65293			+ 177·18353			+ 206·71411			+ 236·24470				+ 265·77529				+ 295·30588			{ + 324·83647 { + 354·36705		
+ 9·880			+ 11·856			+ 13·832			+ 15·808				+ 17·784				+ 19·760			{ + 21·736 { + 23·712		
Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction		Week-day Month	Day	Fraction		Week-day Month	Day	Fraction	Week-day Month	Day	Fraction
1 S	6	·91	3 O	6	·44	4 N	4○	·97	6 D	4●	·50	**40**	1 Jr	3	·03		2 F	1	·56	4 Mr	2	·09
6 Au	26	·27	7 S	24	·81	2 O	24○	·34	3 N	22	·87		5 D	22	·40	**41**	6 Jr	20	·93	1 F	19	·46
5 S	14	·17	6 O	13●	·70	1 N	12	·23	2 D	11	·76	**42**	4 Jr	10	·29		5 F	8	·83	7 Mr	10○	·36
2 S	3○	·54	4 O	3●	·07	5 N	1	·60	7 D	1	·13		1 D	30	·66	**43**	3 Jr	29	·19	4 F	27●○	·72
6 Au	23○	·91	1 S	22	·44	2 O	21	·97	4 N	20	·50		6 D	20	·03	**44**	7 Jr	18	·56	2 F	17●○	·09
5 S	10	·80	7 O	10	·33	1 N	8	·87	3 D	8	·40	**45**	4 Jr	6	·93		6 F	5	·46	7 Mr	6	·99
3 Au	31	·17	4 S	29	·70	6 O	29	·23	7 N	27	·76		2 D	27○	·29	**46**	3 Jr	25	·82	5 F	24	·35
7 Au	20	·54	2 S	19	·07	3 O	18	·60	5 N	17	·13		6 D	16●○	·66	**47**	1 Jr	15	·19	2 F	13	·72
6 S	8	·44	7 O	7	·97	2 N	6	·50	4 D	6○	·03	**48**	5 Jr	4	·56		7 F	3	·09	1 Mr	3	·62
3 Au	27	·80	5 S	26	·33	6 O	25	·86	1 N	24●	·39		2 D	23	·93	**49**	4 Jr	22	·46	5 F	20	·99
2 S	15	·70	4 O	15○	·23	5 N	13	·76	7 D	13	·29	**50**	1 Jr	11	·82		3 F	10	·35	4 Mr	11	·88
7 S	5	·07	1 O	4○	·60	3 N	3	·13	4 D	2	·66	**51**	6 Jr	1	·19		7 Jr	30	·72	2 Mr	1	·25
4 Au	25	·43	5 S	23●○	·97	7 O	23	·50	2 N	22	·03		3 D	21	·56	**52**	5 Jr	20	·09	6 F	18	·62
3 S	12	·33	4 O	11	·86	6 N	10	·39	7 D	9	·92	**53**	2 Jr	8	·45		3 F	6○	·99	5 Mr	8●	·52
7 S	1	·70	2 O	1	·23	3 O	30	·76	5 N	29	·29		6 D	28	·82	**54**	1 Jr	27○	·35	2 F	25●	·88
5 Au	22	·07	6 S	20	·60	1 O	20	·13	2 N	18	·66		4 D	18	·19	**55**	5 Jr	16○	·72	7 F	15	·25
3 S	9	·96	5 O	9	·49	7 N	8	·03	1 D	7	·56	**56**	3 Jr	6	·09		4 F	4	·62	6 Mr	5	·15
1 Au	29	·33	2 S	27	·86	4 O	27	·39	5 N	25○	·92		7 D	25	·45	**57**	1 Jr	23	·98	3 F	22	·51
{ 5 Au	18	·70	1 O	16	·76	3 N	15○	·29	4 D	14	·82	**58**	6 Jr	13	·35		7 F	11	·88	2 Mr	13	·41
{ 7 S	17	·23																				
4 S	6	·60	6 O	6	·13	7 N	4○	·66	2 D	4	·19	**59**	3 Jr	2	·72		5 F	1	·25	6 Mr	2	·78
1 Au	26	·96	3 S	25	·49	5 O	25●	·02	6 N	23	·55		1 D	23	·09	**60**	2 Jr	21	·62	4 F	20	·15
7 S	13○	·86	2 O	13●	·39	3 N	11	·92	5 D	11	·45	**61**	6 Jr	9	·98		1 F	8	·51	3 Mr	10●○	·04
5 S	3○	·23	6 O	2●	·76	1 N	1	·29	2 N	30	·82		4 D	30	·35	**62**	5 Jr	28	·88	7 F	27●○	·41
2 Au	23○	·59	4 S	22	·13	5 O	21	·66	7 N	20	·19		1 D	19	·72	**63**	3 Jr	18	·25	4 F	16●	·78
1 S	11	·49	3 O	11	·02	4 N	9	·55	6 D	9	·08	**64**	7 Jr	7○	·61		2 F	6	·15	3 Mr	6	·68
5 Au	30	·86	7 S	29	·39	1 O	28	·92	3 N	27	·45		4 D	26○	·98	**65**	6 Jr	25	·51	1 F	24	·04
3 Au	20	·23	4 S	18	·76	6 O	18	·29	7 N	16	·82		2 D	16●○	·35	**66**	3 Jr	14	·88	{ 5 F	13	·41
																				{ 6 Mr	14	·94
2 S	8	·12	3 O	7	·65	5 N	6	·19	6 D	5	·72	**67**	1 Jr	4	·25		2 F	2	·78	4 Mr	4	·31
6 Au	28	·49	1 S	27	·02	2 O	26○	·55	4 N	25	·08		5 D	24	·61	**68**	7 Jr	23	·14	1 F	21	·67
5 S	15	·39	6 O	14○	·92	1 N	13	·45	2 D	12	·98	**69**	4 Jr	11	·51		6 F	10	·04	7 Mr	11	·57
2 S	4	·76	4 O	4●○	·29	5 N	2	·82	7 D	2	·35		1 D	31	·88	**70**	3 Jr	30	·41	4 F	28	·94
7 Au	25	·12	1 S	23●	·65	3 O	23	·18	4 N	21	·71		6 D	21	·25	**71**	7 Jr	19	·78	2 F	18○	·31
6 S	13	·02	7 O	12	·55	2 N	11	·08	3 D	10	·61	**72**	5 Jr	9	·14		6 F	7○	·67	1 Mr	8	·20
3 S	1	·39	4 S	30	·92	6 O	30	·45	7 N	28	·98		2 D	28	·51	**73**	4 Jr	27○	·04	5 F	25	·57
7 Au	21	·75	2 S	20	·29	3 O	19	·82	5 N	18	·35		6 D	17	·88	**74**	1 Jr	16	·41	2 F	14	·94
6 S	9	·65	1 O	9	·18	2 N	7	·71	4 D	7○	·24	**75**	5 Jr	5○	·77		7 F	4	·31	1 Mr	5	·84
4 Au	30	·02	5 S	28	·55	7 O	28	·08	1 N	26○	·61		3 D	26●	·14	**76**	4 Jr	24	·67	6 F	23	·20
{ 1 Au	18	·39	4 O	16	·45	5 N	14○	·98	7 D	14	·51	**77**	2 Jr	13	·04		3 F	11	·57	5 Mr	13	·10
{ 2 S	16	·92																				
7 S	6	·28	1 O	5	·81	3 N	4	·35	4 D	3	·88	**78**	6 Jr	2	·41		7 Jr	31	·94	2 Mr	2	·47
4 Au	26	·65	6 S	25○	·18	7 O	24●	·71	2 N	23	·24		3 D	22	·77	**79**	5 Jr	21	·30	6 F	19	·83

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
3180	136	1	15M	·4249	5·9408	24·455	**79**	6	1	Mr	21○	·36	2	Ap	19	·90	4	My	19	·43	5	Je	17	·96	2	Au	16	·02
																					7	Jl	17	·49				
3181	137	2	14M	·6836	24·5796	22·588	**80**	7	7	Ap	8	·26	1	My	7	·79	3	Je	6	·32	4	Ji	5	·85	6	Au	4	·39
3182	138	3	14M	·9424	13·6879	18·745	**81**	2	4	Mr	28	·63	6	Ap	27	·16	7	My	26	·69	2	Je	25	·22	3	Jl	24	·75
3183	139	4	15M	·2011	2·7962	14·902	**82**	3	2	Mr	18	·00	3	Ap	16	·53	6	Je	14	·59	1	Jl	14○	·12	2	Au	12●	·65
													5	My	16	·06												
3184	140	5	15M	·4599	21·4351	13·036	**83**	4	7	Ap	5	·89	2	My	5	·43	3	Je	3	·96	5	Jl	3○	·49	7	Au	2●	·02
3185	141	6	14M	·7186	10·5434	9·193	**84**	5	5	Mr	25	·26	6	Ap	23	·79	1	My	23	·32	2	Je	21○	·85	4	Jl	21	·38
3186	142	7	14M	·9774	29·1823	7·326	**85**	7	4	Ap	13	·16	5	My	12○	·69	7	Je	11●	·22	1	Jl	10	·75	3	Au	9	·28
3187	143	8	15M	·2362	18·2906	3·483	**86**	1	1	Ap	2	·53	3	My	2○	·06	4	My	31●	·59	6	Je	30	·12	7	Jl	29	·65
3188	144	9	15M	·4949	7·3989	27·195	**87**	2	5	Mr	22	·89	7	Ap	21○	·42	1	My	20	·95	3	Je	19	·48	6	Au	17	·55
																					5	Jl	19	·02				
3189	145	10	14M	·7537	26·0378	25·328	**88**	3	4	Ap	9●	·79	6	My	9	·32	7	Je	7	·85	2	Jl	7	·38	3	Au	5	·91
3190	146	11	15M	·0124	15·1461	21·486	**89**	5	2	Mr	30●	·16	3	Ap	28	·69	5	My	28	·22	6	Je	26	·75	1	Jl	26	·28
3191	147	12	15M	·2712	4·2544	17·643	**90**	6	6	Mr	19●	·52	1	Ap	18	·06	2	My	17	·59	5	Jl	15	·65	7	Au	14○	·18
																	4	Je	16	·12								
3192	148	13	15M	·5299	22·8933	15·776	**91**	7	5	Ap	7	·42	6	My	6	·95	1	Je	5	·48	3	Jl	5	·01	4	Au	3●○	·54
3193	149	14	14M	·7887	12·0016	11·933	**92**	1	2	Mr	26	·79	4	Ap	25	·32	5	My	24	·85	7	Je	23	·38	1	Jl	22●	·91
3194	150	15	15M	·0474	1·1099	8·091	**93**	3	7	Mr	16	·16	3	My	14	·22	4	Je	12○	·75	6	Jl	12	·28	7	Au	10	·81
									1	Ap	14	·69																
3195	151	16	15M	·3062	19·7488	6·224	**94**	4	6	Ap	4	·05	7	My	3	·58	2	Je	2●○	·12	3	Jl	1	·65	5	Jl	31	·18
2196	152	17	15M	·5650	8·8571	2·381	**95**	5	3	Mr	24	·42	4	Ap	22	·95	6	My	22●○	·48	1	Je	21	·01	2	Jl	20	·54
																									4	Au	19	·07
3197	153	18	14M	·8237	27·4959	0·514	**96**	6	2	Ap	11	·32	3	My	10●	·85	5	Je	9	·38	6	Jl	8	·91	1	Au	7	·44
3198	154	19	15M	·0825	16·6042	24·226	**97**	1	6	Mr	31●○	·69	1	Ap	30	·22	2	My	29	·75	4	Je	28	·28	5	Jl	27	·81
3199	155	20	15M	·3412	5·7125	20·383	**98**	2	4	Mr	21●○	·05	5	Ap	19	·58	7	My	19	·11	1	Je	17	·64	4	Au	15	·71
																					3	Jl	17	·18				
3200	156	21	15M	·6000	24·3514	18·517	**99**	3	2	Ap	8	·95	4	My	8	·48	6	Je	7	·01	7	Jl	6	·54	2	Au	5	·07
3201	157	22	14M	·8587	13·4597	14·674	**100**	4	7	Mr	28	·32	1	Ap	26	·85	3	My	26	·38	4	Je	24	·91	6	Jl	24○	·44
3202	158	23	15M	·1175	2·5680	10·831	**101**	6	4	Mr	17	·68	6	Ap	16	·22	2	Je	14	·28	3	Jl	13○	·81	5	Au	12●	34
													7	My	15	·75												
3203	159	24	15M	·8763	21·2069	8·964	**102**	7	3	Ap	5	·58	5	My	5	·11	6	Je	3	·64	1	Jl	3○	·17	2	Au	1	·70
3204	160	25	15M	·6350	10·3152	5·122	**103**	7	7	Mr	25	·95	2	Ap	24	·48	4	My	24	·01	5	Je	22●	·54	7	Jl	22	·07
3205	161	26	14M	·8938	28·9541	3·255	**104**	2	6	Ap	12	·85	1	My	12○	·38	2	Je	10●	·91	4	Jl	10	·44	5	Au	8	·97
3206	162	27	15M	·1525	18·0624	26·967	**105**	4	4	Ap	2	·21	5	My	1○	·74	7	My	31	·28	1	Je	29	·81	3	Jl	29	·34
3207	163	28	15M	·4113	7·1707	23·124	**106**	5	1	Mr	22	·58	3	Ap	21●	·11	4	My	20	·64	6	Je	19	·17	2	Au	17	·23
																					7	Jl	18	·70				
3208	164	29	15M	·6700	25·8096	21·257	**107**	6	7	Ap	10●	·48	2	My	10	·01	3	Je	8	·54	5	Jl	8	·07	6	Au	6	·60
3209	165	30	14M	·9288	14·9179	17·415	**108**	7	4	Mr	29●	·85	6	Ap	28	·38	7	My	27	·91	2	Je	26	·44	3	Jl	25	·97
3210	166	31	15M	·1876	4·0262	13·572	**109**	2	2	Mr	19	·21	3	Ap	17	·74	5	My	17	·27	1	Jl	15	·34	2	Au	13●○	·87
																	6	Je	15	·80								
3211	167	32	15M	·4463	22·6651	11·705	**110**	3	1	Ap	7	·11	2	My	6	·64	4	Je	5	·17	5	Jl	4	·70	7	Au	3●	·23
3212	168	33	15M	·7051	11·7738	7·862	**111**	4	5	Mr	27	·48	7	Ap	26	·01	1	My	25	·54	3	Je	24○	·07	4	Jl	23	·60
3213	169	34	14M	·9638	0·8817	4·020	**112**	5	2	Mr	15	·84	5	My	13	·91	7	Je	12●○	·44	1	Jl	11	·97	3	Au	10	·50
									4	Ap	14	·38																
3214	170	35	15M	·2226	19·5206	2·153	**113**	7	1	Ap	3	·74	3	My	3	·27	4	Je	1●○	·80	6	Jl	1	·33	7	Jl	30	·86
3215	171	36	15M	·4813	8·6289	25·865	**114**	1	6	Mr	24	·11	7	Ap	22	·64	2	My	22●	·17	3	Je	20	·70	5	Jl	20	·23
																									6	Au	18	·76
3216	172	37	15M	·7401	27·2677	23·998	**115**	2	5	Ap	12○	·01	6	My	11	·54	1	Je	10	·07	2	Jl	9	·60	4	Au	8	·13
3217	173	38	14M	·9988	16·3760	20·155	**116**	3	2	Mr	31●○	·37	3	Ap	29	·90	5	My	29	·44	6	Je	27	·97	1	Jl	27	·50
3218	174	39	15M	·2576	5·4843	16·312	**117**	5	6	Mr	20●	·74	1	Ap	19	·27	2	My	18	·80	4	Je	17	·33	7	Au	15	·39
																					5	Jl	16	·86				

Surya Siddhanta.

			+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470				+ 265·77529				+ 295·30558				+ 324·83647 + 354·36705
			+ 9·880				+ 11·856				+ 13·832				+ 15·808				+ 17·784				+ 19·760				+ 21·736 + 23·712
Asvina				**Kartika**				**Margasira**				**Pausha**				**A.D.**	**Magha**				**A.D.**	**Phalguna**				**Chaitra**			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3	S	14○	·55	5	O	14●	·08	6	N	12	·61	1	D	12	·14	**80**	2	Jr	10	·67		4	F	9	·20	5	Mr	9●○	·73
7	S	2○	·92	2	O	2	·45	3	O	31	·98	5	N	30	·51		7	D	30	·04	**81**	1	Jr	28	·57	3	F	27●	·10
5	Au	23●	·28	6	S	21	·81	1	O	21	·34	2	N	19	·87		4	D	19	·41	**82**	5	Jr	17○	·94	7	F	16	·47
4	S	11	·18	5	O	10	·71	7	N	9	·24	1	D	8	·77	**83**	3	Jr	7○	·30		4	F	5	·83	6	Mr	7	·36
1	Au	31	·55	3	S	30	·08	4	O	29	·61	6	N	28	·14		7	D	27●○	·67	**84**	2	Jr	26	·20	3	F	24	·73
5	Au	19	·91	7	S	18	·45	1	O	17	·98	3	N	16	·51		5	D	16●	·04	**85**	6	Jr	14	·57	{ 1	F	13	·10
																										{ 2	Mr	14	·63
																						5	F	2	·46	7	Mr	4	·00
4	S	7	·81	6	O	7	·34	7	N	5○	·87	2	D	5	·40	**86**	3	Jr	3	·93	**87**	2	Jr	22	·83	4	F	21	·36
2	Au	28	·18	3	S	26	·71	5	O	26○	·24	6	N	24	·77		1	D	24	·30		1	F	10	·73	3	Mr	11	·26
1	S	16	·08	2	O	15●○	·61	4	N	14	·14	5	D	13	·67	**88**	7	Jr	12	·20									
5	S	4	·44	6	O	3●	·97	1	N	2	·50	3	D	2	·04		4	D	31	·57	**89**	6	Jr	30	·10	7	F	28○	·63
2	Au	24○	·81	4	S	23	·34	5	O	22	·87	7	N	21	·40		1	D	20	·93	**90**	3	Jr	19	·46	4	F	17○	·99
1	S	12	·71	3	O	12	·24	4	N	10	·77	6	D	10	·30	**91**	7	Jr	8	·83		2	F	7○	·36	3	Mr	8	·89
6	S	2	·08	7	O	1	·61	2	O	31	·14	3	N	29	·67		5	D	29	·20	**92**	6	Jr	27●	·73	1	F	26	·26
3	Au	21	·44	4	S	19	·97	6	O	19	·50	1	N	18	·03		2	D	17○	·56	**93**	4	Jr	16	·10	5	F	14	·63
2	S	9	·34	3	O	8	·87	5	N	7	·40	6	D	6○	·93	**94**	1	Jr	5●	·46		2	F	3	·99	4	Mr	5	·52
6	Au	29	·71	1	S	28	·24	2	O	27	·77	4	N	26○	·30		5	D	25	·83	**95**	7	Jr	24	·36	1	F	22	·89
5	S	17	·60	7	O	17	·14	1	N	15	·67	3	D	15	·20	**96**	4	Jr	13	·73		6	F	12	·26	7	Mr	12	·79
2	S	5	·97	4	O	5○	·50	6	N	4●	·03	7	D	3	·56	**97**	2	Jr	2	·09		3	Jr	31	·62	5	Mr	2	·16
7	Au	26	·34	1	S	24○	·87	3	O	24	·40	4	N	22	·93		6	D	22	·46	**98**	7	Jr	20	·99	2	F	19	·52
6	S	14○	·24	7	O	13	·77	2	N	12	·30	3	D	11	·83	**99**	5	Jr	10	·36		6	F	8	·89	1	Mr	10	·42
3	S	3●	·60	5	O	3	·13	6	N	1	·66	1	D	1	·20		2	D	30	·73	**100**	4	Jr	29○	·26	5	F	27	·79
7	Au	22●	·97	2	S	21	·50	4	O	21	·03	5	N	19	·56		7	D	19	·09	**01**	1	Jr	17●○	·62	3	F	16	·15
6	S	10	·87	1	O	10	·40	2	N	8	·93	4	D	8	·46	**02**	5	Jr	6○	·99		7	F	5	·52	2	Mr	7	·05
4	Au	31	·24	5	S	29	·77	7	O	29	·30	1	N	27	·83		3	D	27●	·36	**03**	4	Jr	25	·89	6	F	24	·42
1	Au	20	·60	3	S	19	·13	4	O	18	·66	6	N	17○	·19		7	D	16	·72	**04**	2	Jr	15	·26	{ 3	F	13	·79
																										{ 5	Mr	14	·32
																						1	F	2	·15	2	Mr	3	·68
7	S	7	·50	2	O	7	·03	3	N	5○	·56	5	D	5	·09	**05**	6	Jr	3	·62	**06**	5	Jr	22	·52	7	F	21	·05
4	Au	27	·87	6	S	26	·40	7	O	25●○	·93	2	N	24	·46		3	D	23	·99		4	F	10	·42	5	Mr	11○	·95
3	S	15	·76	5	O	15	·30	6	N	13	·83	1	D	13	·36	**07**	2	Jr	11	·89									
1	S	5○	·13	2	O	4	·66	4	N	3	·19	5	D	2	·72	**08**	7	Jr	1	·25		1	Jr	30	·78	3	F	29○	·32
5	Au	24●○	·50	7	S	23	·03	1	O	22	·56	3	N	21	·09		4	D	20	·62	**09**	6	Jr	19	·15	7	F	17○	·68
4	S	12	·40	5	O	11	·93	7	N	10	·46	1	D	9	·99	**10**	3	Jr	8	·52		5	F	7	·05	6	Mr	8	·58
1	S	1	·76	3	O	1	·29	4	O	30	·82	6	N	29	·36		7	D	28○	·89	**11**	2	Jr	27●	·42	3	F	25	·95
6	Au	22	·13	7	S	20	·66	2	O	20	·19	3	N	18	·72		5	D	18○	·25	**12**	6	Jr	16	·78	1	F	15	·31
5	S	9	·03	6	O	8	·56	1	N	7	·09	2	D	6○	·62	**13**	4	Jr	5	·15		5	F	3	·68	7	Mr	5	·21
2	Au	29	·40	3	S	27	·93	5	O	27	·46	6	N	25●	·99		1	D	25	·52	**14**	3	Jr	24	·05	4	F	22	·58
1	S	17	·29	2	O	16○	·82	4	N	15●	·35	5	D	14	·88	**15**	7	Jr	13	·42		1	F	11	·95	3	Mr	13	48
5	S	6	·66	7	O	6○	·19	1	N	4●	·72	3	D	4	·25	**16**	4	Jr	2	·78		6	F	1	·31	7	Mr	1	·84
3	Au	26	·03	4	S	24○	·56	6	O	24	·09	7	N	22	·62		2	D	22	·15	**17**	3	Jr	20	·68	5	F	19	·21
1	S	13	·92	3	O	13	·46	4	N	11	·99	6	D	11	·52	**18**	1	Jr	10	·05		2	F	8○	·58	4	Mr	10	·10

☉'s Anom col. 6 + 29·53059 + 59·06117 + 88·59176 + 118·12238

☾'s Anom col. 7 + 1·976 + 5·95[illegible] + 5·928 + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
3219	175	40	15M	·5164	24·1232	14·446	**118**	6	5	Ap	8	·64	7	My	8	·17	1	Je	6	·70	3	Jl	6	·23	4	Au	4○	·76
3220	176	41	15M	·7751	13·2315	10·603	**119**	7	3	Mr	29	·01	4	Ap	27	·54	6	My	27	·07	7	Je	25	·60	2	Jl	25○	·13
3221	177	42	15M	·0339	2·3398	6·760	**120**	1	7	Mr	17	·37	1	Ap	15	·90	4	Je	13	·96	6	Jl	13○	·50	1	Au	12	·03
													3	My	15	·43												
3222	178	43	15M	·2926	20·9787	4·893	**121**	3	6	Ap	5	·27	7	My	4	·80	2	Je	3	·33	3	Jl	2●	·86	5	Au	1	·39
3223	179	44	15M	·5514	10·0870	1·051	**122**	4	3	Mr	25	·64	5	Ap	24	·17	6	My	23○	·70	2	Jl	21	·76	4	Au	20	·29
																	1	Je	22●	·23								
3224	180	45	15M	·8101	28·7259	26·739	**123**	5	2	Ap	13	·54	4	My	13○	·07	5	Je	11	·60	7	Jl	11	·13	1	Au	9	·66
3225	181	46	15M	·0689	17·8342	22·896	**124**	6	6	Ap	1	·90	1	My	1●	·43	2	My	30	·96	4	Je	29	·49	6	Jl	29	·02
3226	182	47	15M	·3277	6·9425	19·053	**125**	1	4	Mr	22○●	·28	5	Ap	20●	·80	7	My	20	·33	1	Je	18	·86	4	Au	16	·92
																					3	Jl	18	·39				
3227	183	48	15M	·5864	25·5814	17·176	**126**	2	3	Ap	10●	·17	4	My	9	·70	6	Je	8	·23	7	Jl	7	·76	2	Au	6	·29
3228	184	49	15M	·8452	14·6897	13·344	**127**	3	7	Mr	30	·53	2	Ap	29	·06	3	My	28	·60	5	Je	27	·13	6	Jl	26	·66
3229	185	50	15M	·1039	3·7980	9·501	**128**	4	4	Mr	18	·90	6	Ap	17	·43	7	My	16	·96	4	Jl	15	·02	5	Au	13	·55
																	2	Je	15	·49								
3230	186	51	15M	·3627	22·4369	7·634	**129**	6	3	Ap	6	·80	5	My	6	·33	6	Je	4	·86	1	Jl	4○	·39	2	Au	2	·92
3231	187	52	15M	·6214	11·5452	3·791	**130**	7	1	Mr	27	·17	2	Ap	25	·70	4	My	25	·23	5	Je	23●○	·76	7	Jl	23	·29
3232	188	53	15M	·8802	0·6535	27·503	**131**	1	5	Mr	16	·53	1	My	14	·59	3	Je	13●○	·12	4	Jl	12	·66	6	Au	11	·19
									7	Ap	15	·06																
3233	189	54	15M	·1389	19·2923	25·636	**132**	2	4	Ap	3	·43	5	My	2	·96	7	Je	1●	·49	2	Jl	1	·02	3	Jl	30	·55
3234	190	55	15M	·3977	8·4006	21·794	**133**	4	1	Mr	23	·80	3	Ap	22○	·33	4	My	21	·86	6	Je	20	·39	7	Jl	19	·92
																									2	Au	18	·45
3235	191	56	15M	·6565	27·0395	19·927	**134**	5	7	Ap	11●○	·70	2	My	11	·23	3	Je	9	·76	5	Jl	9	·29	6	Au	7	·82
3236	192	57	15M	·9152	16·1478	16·084	**135**	6	5	Ap	1●○	·06	6	Ap	30	·59	1	My	30	·12	2	Je	28	·65	4	Jl	28	·18
3237	193	58	15M	·1740	5·2561	12·241	**136**	7	2	Mr	20	·43	3	Ap	18	·96	5	My	18	·49	7	Je	17	·02	3	Au	15○	·08
																					1	Jl	16	·55				
3238	194	59	15M	·4327	23·8950	10·375	**137**	2	1	Ap	8	·33	2	My	7	·86	4	Je	6	·39	5	Jl	5	·92	7	Au	4○	·45
3239	195	60	15M	·6915	13·0083	6·532	**138**	3	5	Mr	28	·69	7	Ap	27	·22	1	My	26	·76	3	Je	25	·29	4	Jl	24○	·82
3240	196	61	15M	·9502	2·1116	2·689	**139**	4	3	Mr	18	·06	4	Ap	16	·59	7	Je	14	·65	2	Jl	14	·18	3	Au	12	·71
													6	My	16	·12												
3241	197	62	15M	·2090	20·7505	0·822	**140**	5	1	Ap	4	·96	3	My	4	·49	5	Je	3○	·02	6	Jl	2●	·55	1	Au	1	·08
3242	198	63	15M	·4678	9·8589	24·534	**141**	7	6	Mr	25	·33	7	Ap	23	·86	2	My	23○	·39	3	Je	21●	·92	5	Jl	21	·45
3243	199	64	15M	·7265	28·4977	22·667	**142**	1	5	Ap	13	·22	6	My	12●○	·75	1	Je	11	·28	2	Jl	10	·82	4	Au	9	·35
3244	200	65	15M	·9853	17·6060	18·825	**143**	2	2	Ap	2○	·59	4	My	2●	·12	5	My	31	·65	7	Je	30	·18	1	Jl	29	·71
3245	201	66	15M	·2440	6·7148	14·982	**144**	3	6	Mr	21○	·96	1	Ap	20●	·49	3	My	20	·02	4	Je	18	·55	7	Au	16	·61
																					6	Jl	18	·08				
3246	202	67	15M	·5028	25·3532	13·115	**145**	5	5	Ap	9	·86	7	My	9	·39	1	Je	7	·92	3	Jl	7	·45	4	Au	5	·98
3247	203	68	15M	·7615	14·4615	9·272	**146**	6	3	Mr	30	·22	4	Ap	28	·75	6	My	28	·28	7	Je	26	·81	2	Jl	26	·34
3248	204	69	16M	·0203	3·5698	5·430	**147**	7	7	Mr	19	·59	2	Ap	18	·12	5	Je	16	·18	6	Jl	15○	·71	1	Au	14	·24
													3	My	17	·65												
3249	205	70	15M	·2791	22·2087	3·563	**148**	1	6	Ap	6	·49	1	My	6	·02	2	Je	4	·55	4	Jl	4●○	·08	5	Au	2	·61
3250	206	71	15M	·5378	11·3170	27·275	**149**	3	3	Mr	26	·85	5	Ap	25	·38	6	My	24	·92	1	Je	23●○	·45	2	Jl	22	·98
3251	207	72	15M	·7966	0·4253	23·432	**150**	4	1	Mr	16	·22	4	My	14	·28	5	Je	12●	·81	7	Jl	12	·34	1	Au	10	·87
									2	Ap	14	·75																
3252	208	73	16M	·0553	19·0641	21·565	**151**	5	7	Ap	4	·12	1	My	3○	·65	3	Je	2	·18	4	Jl	1	·71	6	Jl	31	·24
3253	209	74	15M	·3141	8·1724	17·723	**152**	6	4	Mr	23	·49	6	Ap	22●○	·02	7	My	21	·55	2	Je	20	·08	3	Jl	19	·61
																									5	Au	18	·14
3254	210	75	15M	·5728	26·8113	15·856	**153**	1	3	Ap	11●○	·38	4	My	10	·91	6	Je	9	·44	7	Jl	8	·98	2	Au	7	·51
3255	211	76	15M	·8316	15·9196	12·013	**154**	2	7	Mr	31●	·75	2	Ap	30	·28	3	My	29	·81	5	Je	28	·34	6	Jl	27	·87
3256	212	77	16M	·0904	5·0279	8·170	**155**	3	5	Mr	21	·12	6	Ap	19	·65	1	My	19	·18	4	Jl	17	·24	5	Au	15○	·77
																	2	Je	17	·71								
3257	213	78	15M	·3491	23·6668	6·304	**156**	4	4	Ap	8	·02	5	My	7	·55	7	Je	6	·08	1	Jl	5	·61	3	Au	4○	·14
3258	214	79	15M	·6079	12·7751	2·461	**157**	6	1	Mr	28	·38	2	Ap	26	·91	4	My	26	·44	5	Je	24●	·97	7	Jl	24	·50

Surya Siddhanta.

+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·34588				{ + 324·83647 + 354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 + 23·712			
Asvina				**Kartika**				**Margasira**				**Pausha**				**A.D.**	**Magha**				**A.D.**	**Phalguna**				**Chaitra**			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	3●	·29	7	O	2	·82	2	N	1	·35	3	N	30	·88		5	D	30	·41	**19**	6	Jr	28○	·94	1	F	27	·48
3	Au	23	·66	5	S	22	·19	6	O	21	·72	1	N	20	·25		2	D	19	·78	**20**	4	Jr	18●○	·31	5	F	16	·84
2	S	10	·56	4	O	10	·09	5	N	8	·62	7	D	8	·15	**21**	1	Jr	6	·68		3	F	5	·21	4	Mr	6	·74
6	Au	30	·92	1	S	29	·45	2	O	28	·98	4	N	27○	·52		6	D	27	·05	**22**	7	Jr	25	·58	2	F	24	·11
5	S	18	·82	7	O	18	·35	**Margasira Kshaya.**				1	N	16○	·88		3	D	16	·41	**23**	4	Jr	14	·94	{ 6	F	13	·47
																										{ 1	Mr	15	·00
3	S	8	·19	4	O	7	·72	6	N	6●○	·25	7	D	5	·78	**24**	2	Jr	4	·31		3	F	2	·84	5	Mr	3	·37
7	Au	27	·56	2	S	26	·09	3	O	25●	·62	5	N	24	·15		6	D	23	·68	**25**	1	Jr	22	·21	2	F	20	·74
6	S	15○	·45	7	O	14	·98	2	N	13	·51	4	D	13	·04	**26**	5	Jr	11	·58		7	F	10	·11	1	Mr	11○	·64
3	S	4●○	·82	5	O	4	·35	6	N	2	·88	1	D	2	·41		2	D	31	·94	**27**	4	Jr	30	·47	6	Mr	1○	·00
1	Au	25●○	·19	2	S	23	·72	4	O	23	·25	5	N	21	·78		7	D	21	·31	**28**	1	Jr	19	·84	3	F	18	·37
7	S	12	·08	1	O	11	·62	3	N	10	·15	4	D	9	·68	**29**	6	Jr	8○	·21		7	F	6●	·74	2	Mr	8	·27
4	S	1	·45	5	S	30	·98	7	O	30	·51	2	N	29	·04		3	D	28○	·57	**30**	5	Jr	27●	·10	6	F	25	·64
1	Au	21	·82	3	S	20	·35	4	O	19	·88	6	N	18	·41		7	D	17○	·94	**31**	2	Jr	16	·47	4	F	15	·00
7	S	9	·72	2	O	9	·25	3	N	7	·78	5	D	7	·31	**32**	6	Jr	5	·84		1	F	4	·37	2	Mr	4	·90
5	Au	29	·08	6	S	27	·61	1	O	27○	·14	2	N	25●	·68		4	D	25	·21	**33**	5	Jr	23	·74	7	F	22	·27
3	S	16	·98	5	O	16○	·51	7	N	15●	·04	1	D	14	·57	**34**	3	Jr	13	·10		4	F	11	·63	6	Mr	13	·16
1	S	6	·35	2	O	5○	·88	4	N	4	·41	5	D	3	·94	**35**	7	Jr	2	·47		2	F	1	·00	3	Mr	2	·53
5	Au	26	·72	7	S	25●	·25	1	O	24	·78	3	N	23	·31		4	D	22	·84	**36**	6	Jr	21	·37	7	F	19○	·90
4	S	13●	·61	6	O	13	·14	7	N	11	·67	2	D	11	·20	**37**	3	Jr	9	·74		5	F	8○	·27	6	Mr	9	·80
1	S	2●	·98	3	O	2	·51	5	N	1	·04	6	N	30	·57		1	D	30	·10	**38**	2	Jr	28●○	·63	4	F	27	·16
6	Au	23	·35	7	S	21	·88	2	O	21	·41	3	N	19	·94		5	D	19	·47	**39**	7	Jr	18●	·00	1	F	16	·53
5	S	11	·24	6	O	10	·78	1	N	9	·31	2	D	8○	·84	**40**	4	Jr	7	·37		5	F	5	·90	7	Mr	6	·43
2	Au	30	·61	4	S	29	·14	5	O	28	·67	7	N	27○	·20		1	D	26	·73	**41**	3	Jr	25	·26	4	F	23	·80
{ 6	Au	19	·98	3	O	18	·04	**Margasira Kshaya.**				4	N	16●○	·57		6	D	16	·10	**42**	7	Jr	14	·63	{ 2	F	13	·16
{ 1	S	18	·51																							{ 3	Mr	14	·69
5	S	7	·88	7	O	7	·41	1	N	5●	·94	3	D	5	·47	**43**	5	Jr	4	·00		6	F	2	·53	1	Mr	4	·06
3	Au	28	·24	4	S	26○	·77	6	O	26	·30	7	N	24	·84		2	D	24	·37	**44**	3	Jr	22	·90	5	F	21	·43
2	S	15○	·14	3	O	14	·67	5	N	13	·20	6	D	12	·73	**45**	1	Jr	11	·26		2	F	9	·79	4	Mr	11○	·32
6	S	4●○	·51	1	O	4	·04	2	N	2	·57	4	D	2	·10		5	D	31	·63	**46**	7	Jr	30	·16	1	F	28●	·69
3	Au	24●	·88	5	S	23	·41	6	O	22	·94	1	N	21	·47		3	D	21	·00	**47**	4	Jr	19○	·53	6	F	18●	·06
2	S	12	·77	4	O	12	·30	5	N	10	·83	7	D	10	·36	**48**	1	Jr	8○	·90		3	F	7●	·43	4	Mr	7	·96
7	S	1	·14	1	S	30	·67	3	O	30	·20	4	N	28	·73		6	D	28○	·26	**49**	7	Jr	26	·79	2	F	25	·32
4	Au	21	·51	7	S	20	·04	7	O	19	·57	2	N	18	·10		3	D	17	·63	**50**	5	Jr	16	·16	6	F	14	·69
3	S	9	·40	4	O	8	·94	6	N	7○	·47	1	D	7●	·00	**51**	2	Jr	5	·53		4	F	4	·06	5	Mr	5	·59
7	Au	29	·77	2	S	28	·30	3	O	27○	·83	5	N	26●	·36		6	D	25	·89	**52**	1	Jr	24	·42	2	F	22	·96
6	S	16	·67	1	O	16○	·20	2	N	14	·73	4	D	14	·26	**53**	5	Jr	12	·79		7	F	11	·32	1	Mr	12	·85
4	S	6	04	5	O	5	·57	7	N	4	·10	1	D	3	·63	**54**	3	Jr	2	·16		4	Jr	31	·69	6	Mr	2○	·22
1	Au	26○	·40	2	S	24●	·93	4	O	24	·46	6	N	23	·00		7	D	22	·53	**55**	2	Jr	21	·06	3	F	19○	·59
7	S	[illegible]●	·30	1	O	13	·83	3	N	12	·36	4	D	11	·89	**56**	6	Jr	10	·42		7	F	8●○	·95	2	Mr	9	·48
4	S	2	·67	6	O	2	·20	7	O	31	·73	2	N	30	·26		3	D	29	·79	**57**	5	Jr	28●	·32	6	F	26	·85
2	Au	23	·04	3	S	21	·57	5	O	21	·10	6	N	19	·63		1	D	19○	·16	**58**	2	Jr	17	·69	4	F	16	·22

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month.	Ashada Day	Ashada Fraction.	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
						☉'s Anom col. 6							+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12135			
						☾'s Anom col. 7							+ 1·976				+ 3·952				+ 5·928				+ 7·904			
3259	215	80	15M	·8666	1·8834	26·173	**158**	7	5	Mr	17	·75	7	Ap	16	·28	3	Je	14○	·34	4	Jl	13●	·87	6	Au	12	·40
													1	My	15	·81												
3260	216	81	16M	·1254	20·5223	24·306	**159**	1	4	Ap	5	·65	6	My	5	·18	7	Je	3○	·71	2	Jl	3	·24	3	Au	1	·77
3261	217	82	15M	·3841	9·6306	20·463	**160**	2	2	Mr	25	·01	3	Ap	23	·54	5	My	23●○	·07	6	Je	21	·61	1	Jl	21	·14
3262	218	83	15M	·6429	28·2695	18·596	**161**	4	7	Ap	12	·91	2	My	12●	·44	3	Je	10	·97	5	Jl	10	·50	7	Au	9	·03
3263	219	84	15M	·9016	17·3778	14·754	**162**	5	5	Ap	2○	·28	6	My	1●	·81	1	My	31	·34	2	Je	29	·87	4	Jl	29	·40
3264	220	85	16M	·1604	6·4861	10·911	**163**	6	2	Mr	22○	·65	4	Ap	21	·18	5	My	20	·71	7	Je	19	·24	3	Au	17	·30
																					1	Jl	18	·77				
3265	221	86	15M	·4192	25·1250	9·044	**164**	7	1	Ap	9	·54	3	My	9	·07	4	Je	7	·60	6	Jl	7	·14	7	Au	5	·67
3266	222	87	15M	·6779	14·2333	5·201	**165**	2	5	Mr	29	·91	7	Ap	28	·44	1	My	27	·97	3	Je	26	·50	5	Jl	26○	·03
3267	223	88	15M	·9367	3·3416	1·359	**166**	3	3	Mr	19	·28	4	Ap	17	·81	7	Je	15	·87	2	Jl	15○	·40	3	Au	13	·93
													6	My	17	·34												
3268	224	89	16M	·1954	21·9805	27·047	**167**	4	2	Ap	7	·18	3	My	6	·71	5	Je	5	·24	6	Jl	4●○	·77	1	Au	3	·30
3269	225	90	15M	·4542	11·0888	23·204	**168**	5	6	Mr	26	·54	1	Ap	25	·07	2	My	24	·60	4	Je	23●	·13	5	Jl	22	·66
3270	226	91	15M	·7129	0·1971	19·361	**169**	7	3	Mr	15	·91	6	My	13○	·97	1	Je	12	·50	3	Jl	12	·03	4	Au	10	·56
									5	Ap	14	·44																
3271	227	92	15M	·9717	18·8359	17·494	**170**	1	2	Ap	3	·81	4	My	3●○	·34	5	Je	1	·87	7	Jl	1	·40	1	Jl	30	·93
3272	228	93	16M	·2305	7·9442	13·652	**171**	2	7	Mr	24	·17	1	Ap	22●○	·70	3	My	22	·24	4	Je	20	·77	6	Jl	20	·30
																									7	Au	18	·83
3273	229	94	15M	·4892	26·5831	11·785	**172**	3	6	Ap	11	·07	7	My	10	·60	2	Je	9	·13	3	Jl	8	·66	5	Au	7	·19
3274	230	95	15M	·7480	15·6914	7·942	**173**	5	3	Mr	31	·44	4	Ap	29	·97	6	My	29	·50	1	Je	28	·03	2	Jl	27	·56
3275	231	96	16M	·0067	4·7997	4·099	**174**	6	7	Mr	20	·81	2	Ap	19	·34	3	My	18	·87	6	Jl	16	·93	1	Au	15○	·46
																	5	Je	17	·40								
3276	232	97	16M	·2655	23·4386	2·233	**175**	7	6	Ap	8	·70	1	My	8	·23	2	Je	6	·76	4	Jl	6	·30	5	Au	4●	·83
3277	233	98	15M	·5242	12·5469	25·945	**176**	1	4	Mr	28	·07	5	Ap	26	·60	7	My	26	·13	1	Je	24○	·66	3	Jl	24●	·19
3278	234	99	15M	·7830	1·6552	22·102	**177**	3	1	Mr	17	·44	2	Ap	15	·97	6	Je	14○	·03	7	Jl	13●	·56	2	Au	12	·09
													4	My	15	·50												
3279	235	100	16M	·0417	20·2941	20·235	**178**	4	7	Ap	5	·34	1	My	4	·87	3	Je	3○	·40	4	Jl	2	·93	6	Au	1	·46
3280	236	101	16M	·3005	9·4024	16·392	**179**	5	4	Mr	25	·70	6	Ap	24	·23	7	My	23●	·76	2	Je	22	·29	3	Jl	21	·82
3281	237	102	15M	·5593	28·0413	14·526	**180**	6	3	Ap	12○	·60	5	My	12●	·13	6	Je	10	·66	1	Jl	10	·19	2	Au	8	·72
3282	238	103	15M	·8180	17·1496	10·683	**181**	1	7	Ap	1○	·97	2	My	1	·50	4	My	31	·03	5	Je	29	·56	7	Jl	29	·09
3283	239	104	16M	·0768	6·2579	6·840	**182**	2	5	Mr	22	·33	6	Ap	20	·86	1	My	20	·40	2	Je	18	·93	5	Au	16	·99
																					4	Jl	18	·46				
3284	240	105	16M	·3355	24·8968	4·973	**183**	3	4	Ap	10	·23	5	My	9	·76	7	Je	8	·29	1	Jl	7	·82	3	Au	6○	·35
3285	241	106	15M	·5943	14·0051	1·130	**184**	4	1	Mr	29	·60	3	Ap	28	·13	4	My	27	·66	6	Je	26	·19	7	Jl	25○	·72
3286	242	107	15M	·8530	3·1134	24·842	**185**	6	5	Mr	18	·97	7	Ap	17	·50	3	Je	15	·56	5	Jl	15●○	·09	6	Au	13	·62
													2	My	17	·03												
3287	243	108	16M	·1118	21·7522	22·976	**186**	7	4	Ap	6	·86	6	My	6	·39	7	Je	4	·92	2	Jl	4●	·46	3	Au	2	·99
3288	244	109	16M	·3706	10·8605	19·133	**187**	1	2	Mr	27	·23	3	Ap	25	·76	5	My	25○	·29	6	Je	23	·82	1	Jl	23	·35
3289	245	110	15M	·6293	29·4994	17·266	**188**	2	6	Mr	15	·60	2	My	13●○	·66	4	Je	12	·19	5	Jl	11	·72	7	Au	10	·25
									1	Ap	14	·13																
3290	246	111	15M	·8881	18·6077	13·423	**189**	4	5	Ap	3	·50	7	My	3●○	·03	1	Je	1	·56	3	Jl	1	·09	4	Jl	30	·62
3291	247	112	16M	·1468	7·7160	9·581	**190**	5	2	Mr	23○	·86	4	Ap	22●	·39	5	My	21	·92	7	Je	20	·45	1	Jl	19	·98
																									3	Au	18	·52
3292	248	113	16M	·4056	26·3549	7·714	**191**	6	1	Ap	11	·76	3	My	11	·29	4	Je	9	·82	6	Jl	9	·35	7	Au	7	·88
3293	249	114	15M	·6643	15·4632	3·871	**192**	7	6	Mr	31	·13	7	Ap	29	·66	2	My	29	·19	3	Je	27	·72	5	Jl	27	·25
3294	250	115	15M	·9231	4·5715	0·028	**193**	2	3	Mr	20	·49	5	Ap	19	·02	6	My	18	·56	2	Jl	16	·62	4	Au	15	·15
																	1	Je	17	·09								
3295	251	116	16M	·1819	23·2104	25·716	**194**	3	2	Ap	8	·39	3	My	7	·92	5	Je	6	·45	6	Jl	5○	·98	1	Au	4●	·51
3296	252	117	16M	·4406	12·3187	21·873	**195**	4	6	Mr	28	·76	1	Ap	27	·29	2	My	26	·82	4	Je	25○	·35	5	Jl	24●	·88
3297	253	118	15M	·6994	1·4270	18·031	**196**	5	4	Mr	17	·13	5	Ap	15	·66	1	Je	13○	·72	3	Jl	13	·25	4	Au	11	·78
													7	My	15	·19												

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
7	S	10	·93	2	O	10	·46	3	N	8	·99	5	D	8○	·52	**59**	7	Jr	7	·06		1	F	5	·59	3	Mr	7	·12
5	Au	31	·30	6	S	29	·83	1	O	29	·36	2	N	27○	·89		4	D	27	·42	**60**	5	Jr	25	·95	7	F	24	·84
2	Au	19	·67	5	O	17	·73	7	N	16	·26	1	D	15	·79	**61**	3	Jr	14	·32		4	F	12	·85	6	Mr	14	·38
4	S	18	·20																										
1	S	7	·56	3	O	7○	·10	4	N	5	·63	6	D	5	·16	**62**	7	Jr	3	·69		2	F	2	·22	3	Mr	3	·75
5	Au	27	·93	7	S	26○	·46	1	O	25	·99	3	N	24	·52		5	D	24	·05	**63**	6	Jr	22	·58	1	F	21	·12
4	S	15●○	·83	6	O	15	·36	7	N	13	·89	2	D	13	·42	**64**	3	Jr	11	·95		5	F	10	·48	7	Mr	11	·01
2	S	4●	·20	3	O	3	·73	5	N	2	·26	6	D	1	·79		1	D	31	·32	**65**	2	Jr	29○	·85	4	F	28●	·38
6	Au	24	·56	1	S	23	·09	2	O	22	·62	4	N	21	·15		5	D	20	·69	**66**	4	Jr	19○	·22	1	F	17●	·75
5	S	12	·46	6	O	11	·99	1	N	10	·52	3	D	10	·05	**67**	4	Jr	8○	·58		6	F	7	·11	7	Mr	8	·64
2	S	1	·83	4	O	1	·36	5	O	30	·89	7	N	29	·42		1	D	28	·95	**68**	3	Jr	27	·48	5	F	26	·01
7	Au	21	·20	1	S	19	·73	3	O	19	·26	4	N	17○	·79		6	D	17●	·32	**69**	7	Jr	15	·85	2	F	14	·38
6	S	9	·09	7	O	8	·62	2	N	7○	·15	3	D	6●	·68	**70**	5	Jr	5	·22		6	F	3	·75	1	Mr	5	·28
3	Au	29	·46	4	S	27	·99	6	O	27○	·52	1	N	26	·05		2	D	25	·58	**71**	4	Jr	24	·11	5	F	22	·64
2	S	17	·36	3	O	16	·89	5	N	15	·42	6	D	14	·95	**72**	1	Jr	13	·48		3	F	12	·01	4	Mr	12○	·54
6	S	5○	·72	1	O	5●	·26	2	N	3	·79	4	D	3	·32	**73**	5	Jr	1	·85		7	Jr	31	·38	1	Mr	1○	·91
4	Au	26○	·09	5	S	24	·62	7	O	24	·15	1	N	22	·68		3	D	22	·21	**74**	4	Jr	20	·74	6	F	19●○	·28
2	S	13	·99	4	O	13	·52	6	N	12	·05	7	D	11	·58	**75**	2	Jr	10	·11		3	F	8●	·64	5	Mr	10	·17
7	S	3	·36	1	O	2	·89	5	N	1	·42	4	N	30	·95		6	D	30○	·48	**76**	1	Jr	29	·01	2	F	27	·54
4	Au	22	·72	6	S	21	·25	7	O	20	·78	2	N	19	·32		3	D	18○	·85	**77**	5	Jr	17	·38	6	F	15	·91
3	S	10	·62	5	O	10	·15	6	N	8	·68	1	D	8●○	·21	**78**	2	Jr	6	·74		4	F	5	·27	5	Mr	6	·80
7	Au	30	·99	2	S	29	·52	4	O	29	·05	5	N	27●	·58		7	D	27	·11	**79**	1	Jr	25	·64	3	F	24	·17
5	Au	20	·36	1	O	18○	·42	2	N	16	·95	4	D	16	·48	**80**	6	Jr	15	·01		7	F	13	·54	2	Mr	14	·07
6	S	18	·89																										
4	S	7	·25	5	O	6○	·78	7	N	5	·31	1	D	4	·84	**81**	3	Jr	3	·38		4	F	1	·91	6	Mr	3	·44
1	Au	27	·62	3	S	26●○	·15	4	O	25	·68	6	N	24	·21		7	D	23	·74	**82**	2	Jr	22	·27	3	F	20	·80
7	S	15	·52	2	O	15	·05	3	N	13	·58	5	D	13	·11	**83**	6	Jr	11	·64		1	F	10○	·17	2	Mr	11●	·70
4	S	4	·88	6	O	4	·42	7	N	2	·95	2	D	2	·48	**84**	4	Jr	1	·01		5	Jr	30○	·54	7	F	29●	·07
2	Au	24	·25	3	S	22	·78	5	O	22	·31	6	N	20	·84		1	D	20	·37	**85**	2	Jr	18○	·90	4	F	17	·44
1	S	12	·15	2	O	11	·68	4	N	10	·21	5	D	9	·74	**86**	7	Jr	8●	·27		1	F	6	·80	3	Mr	8	·33
5	S	1	·52	7	O	1	·05	1	O	30	·58	3	N	29○	·11		4	D	28●	·64	**87**	6	Jr	27	·17	7	F	25	·70
2	Au	21	·88	4	S	20	·41	5	O	19	·94	7	N	18○	·48		2	D	18●	·01	**88**	3	Jr	16	·54	5	F	15	·07
1	S	8	·78	3	O	8	·31	4	N	6○	·84	6	D	6	·37	**89**	7	Jr	4	·90		2	F	3	·43	3	Mr	4	·96
6	Au	29	·15	7	S	27	·68	2	O	27●	·21	3	N	25	·74		5	D	25	·27	**90**	6	Jr	23	·80	1	F	22	·33
5	S	17	·05	6	O	16	·58	1	N	15	·11	2	D	14	·64	**91**	4	Jr	13	·17		5	F	11	·70	7	Mr	13○	·23
2	S	6○	·41	3	O	5●	·94	5	N	4	·47	7	D	4	·00	**92**	1	Jr	2	·54		3	F	1	·07	4	Mr	1●○	·60
6	Au	25○	·78	1	S	24	·31	2	O	23	·84	4	N	22	·37		5	D	21	·90	**93**	7	Jr	20	·43	1	F	18●	·96
5	S	13	·68	7	O	13	·21	1	N	11	·74	3	D	11	·27	**94**	4	Jr	9○	·80		6	F	8	·33	7	Mr	9	·86
3	S	3	·04	4	O	2	·58	6	N	1	·11	7	N	30	·64		2	D	30○	·17	**95**	3	Jr	28	·70	5	F	27	·23
7	Au	23	·41	1	S	21	·94	3	O	21	·47	5	N	20	·00		6	D	19●○	·53	**96**	1	Jr	18	·06	2	F	16	·60
6	S	10	·31	7	O	9	·84	2	N	8	·37	3	D	7●	·90	**97**	5	Jr	6	·43		6	F	4	·96	1	Mr	6	·49

TABLE X-

	☉'s Anom col. 6	+ 29·53059	+ 59·06117	+ 18·59176	+ 118·12235
	☾'s Anom col. 7	+ 1·976	+ 3·952	+ 5·928	+ 7·904

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year: Month and day A.D.	Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Week-day of 1st January	Vaisakha: Week-day	Month	Day	Fraction	Jyeshta: Week-day	Month	Day	Fraction	Ashada: Week-day	Month	Day	Fraction	Sravana: Week-day	Month	Day	Fraction	Bhadrapada: Week-day	Month	Day	Fraction
3298	254	119	15M	·9581	20·0659	16·164	**197**	7	3	Ap	5	·02	7	My	4	·55	6	Je	3	·08	7	Jl	2	·62	2	Au	1	·15
3299	255	120	16M	·2169	9·1742	12·321	**198**	1	7	Mr	23	·39	1	Ap	23○	·92	3	My	23●	·45	4	Je	21	·91	6	Jl	21	·51
3300	256	121	16M	·4756	27·8131	10·454	**199**	2	6	Ap	13○	·29	7	My	12	·82	2	Je	11	·35	3	Jl	10	·88	5	Au	9	·41
3301	257	122	15M	·7344	16·9214	6·612	**200**	3	3	Ap	1●	·66	5	My	1	·19	6	My	30	·72	1	Je	29	·25	2	Jl	28	·78
3302	258	123	15M	·9932	6·0297	2·769	**201**	5	1	Mr	22●	·02	2	Ap	20	·55	4	My	20	·08	{ 5	Je	18	·61	1	Au	16○	·68
																					{ 7	Jl	18	·14				
3303	259	124	16M	·2519	24·6686	0·902	**202**	6	6	Ap	9	·92	1	My	9	·45	2	Je	7	·98	4	Jl	7	·51	6	Au	6○	·04
3304	260	125	16M	·5107	13·7769	24·614	**203**	7	4	Mr	30	·29	5	Ap	28	·82	7	My	28	·35	1	Je	26	·88	3	Jl	26●○	·41
3305	261	126	15M	·7694	2·8852	20·771	**204**	1	1	Mr	18	·65	{ 3	Ap	17	·18	6	Je	15	·25	7	Jl	14●	·78	2	Au	13	·31
													{ 4	My	16	·72												
3306	262	127	16M	·0282	21·5240	18·904	**205**	3	7	Ap	6	·55	2	My	6	·08	3	Je	4○	·61	5	Jl	4	·14	6	Au	2	·67
3307	263	128	16M	·2869	10·6323	15·062	**206**	4	4	Mr	26	·92	6	Ap	25	·45	7	My	24●○	·98	2	Je	23	·51	4	Jl	23	·04
3308	264	129	16M	·5457	29·2712	13·195	**207**	5	3	Ap	14	·82	5	My	14●○	·35	6	Je	12	·88	1	Jl	12	·41	2	Au	10	·94
3309	265	130	15M	·8044	18·3795	9·352	**208**	6	1	Ap	3○	·18	2	My	2●	·71	4	Je	1	·24	5	Je	30	·78	7	Jl	30	·31
3310	266	131	16M	·0632	7·4878	5·509	**209**	1	5	Mr	23○	·55	7	Ap	22	·08	1	My	21	·61	{ 3	Je	20	·14	6	Au	18	·20
																					{ 4	Jl	19	·67				
3311	267	132	16M	·8220	26·1267	3·643	**210**	2	4	Ap	11	·45	5	My	10	·98	7	Je	9	·51	2	Jl	9	·04	3	Au	7	·57
3312	268	133	16M	·5807	15·2350	27·355	**211**	3	1	Mr	31	·82	3	Ap	30	·35	4	My	29	·88	6	Je	28	·41	7	Jl	27	·94
3313	269	134	15M	·8395	4·3433	23·512	**212**	4	6	Mr	20	·18	7	Ap	18	·71	{ 2	My	18	·24	5	Jl	16○	·30	6	Au	14●	·84
																	{ 3	Je	16	·77								
3314	270	135	16M	·0982	22·9822	21·645	**213**	6	5	Ap	8	·08	6	My	7	·61	1	Je	6	·14	2	Jl	5○	·67	4	Au	4●	·20
3315	271	136	16M	·3570	12·0905	17·802	**214**	7	2	Mr	28	·45	3	Ap	26	·98	5	My	26	·51	7	Je	25○	·04	1	Jl	24	·57
3316	272	137	16M	·6157	1·1988	13·960	**215**	1	6	Mr	17	·81	{ 1	Ap	16	·34	4	Je	14●	·41	5	Jl	13	·94	7	Au	12	·47
													{ 2	My	15	·88												
3317	273	138	15M	·8745	19·8377	12·093	**216**	2	5	Ap	4	·71	7	My	4○	·24	1	Je	2●	·77	3	Jl	2	·30	4	Jl	31	·83
3318	274	139	16M	·1333	8·9460	8·250	**217**	4	3	Mr	25	·08	4	Ap	23○	·61	6	My	23	·14	7	Je	21	·67	2	Jl	21	·20
3319	275	140	16M	·3920	27·5849	6·383	**218**	5	1	Ap	12●	·98	3	My	12	·51	5	Je	11	·04	6	Jl	10	·57	1	Au	9	·10
3320	276	141	16M	·6508	16·6932	2·541	**219**	6	6	Ap	2●	·34	7	My	1	·87	2	My	31	·40	3	Je	29	·94	5	Jl	29	·47
3321	277	142	15M	·9095	5·8015	26·252	**220**	7	3	Mr	21●	·71	5	Ap	20	·24	6	My	19	·77	{ 1	Je	18	·30	4	Au	16○	·36
																					{ 2	Jl	17	·83				
3322	278	143	16M	·1683	24·4404	24·386	**221**	2	2	Ap	9	·61	4	My	9	·14	5	Je	7	·67	7	Jl	7	·20	1	Au	5●○	·73
3323	279	144	16M	·4270	13·5486	20·543	**222**	3	6	Mr	29	·98	1	Ap	28	·51	3	My	28	·04	4	Je	26	·57	6	Jl	26●	·10
3324	280	145	16M	·6858	2·6569	16·700	**223**	4	4	Mr	19	·34	{ 5	Ap	17	·87	1	Je	15○	·93	3	Jl	15	·46	5	Au	14	·00
													{ 7	My	17	·40												
3325	281	146	15M	·9445	21·2958	14·833	**224**	5	3	Ap	6	·24	4	My	5	·77	6	Je	4●○	·30	7	Jl	3	·83	2	Au	2	·36
3326	282	147	16M	·2033	10·4041	10·991	**225**	6	7	Mr	26	·61	2	Ap	25	·14	3	My	24●○	·67	5	Je	23	·20	6	Jl	22	·73
3327	283	148	16M	·4621	29·0430	9·124	**226**	1	6	Ap	14	·50	1	My	14	·04	2	Je	12	·57	4	Jl	12	·10	5	Au	10	·63
3328	284	149	16M	·7208	18·1513	5·281	**227**	2	3	Ap	3○	·87	5	My	3	·40	6	Je	1	·93	1	Jl	1	·46	2	Jl	30	·99
3329	285	150	15M	·9796	7·2596	1·438	**228**	3	1	Mr	23●○	·24	2	Ap	21	·77	4	My	21	·30	{ 5	Je	19	·83	1	Au	17	·89
																					{ 7	Jl	19	·36				
3330	286	151	16M	·2383	25·8985	27·126	**229**	5	7	Ap	11	·14	1	My	10	·67	3	Je	9	·20	4	Jl	8	·73	6	Au	7	·26
3331	287	152	16M	·4971	15·0068	23·284	**230**	6	4	Mr	31	·50	6	Ap	30	·03	7	My	29	·56	2	Je	28	·10	3	Jl	27○	·63
3332	288	153	16M	·7558	4·1151	19·441	**231**	7	1	Mr	20	·87	3	Ap	19	·40	{ 4	My	18	·93	7	Jl	16○	·99	2	Au	15●	·52
																	{ 6	Je	17	·46								
3333	289	154	16M	·0146	22·7540	17·574	**232**	1	7	Ap	7	·77	2	My	7	·30	3	Je	5	·83	5	Jl	5○	·36	6	Au	3	·89
3334	290	155	16M	·2734	11·8623	13·731	**233**	3	5	Mr	28	·14	6	Ap	26	·67	1	My	26	·20	2	Je	24●	·73	4	Jl	24	·26
3335	291	156	16M	·5321	0·9706	9·889	**234**	4	{ 2	Mr	17	·50	5	My	15○	·56	7	Je	14●	·09	1	Jl	13	·62	3	Au	12	·16
									{ 4	Ap	16	·03																
3336	292	157	16M	·7909	19·6095	8·022	**235**	5	1	Ap	5	·40	2	My	4○	·93	4	Je	3●	·46	5	Jl	2	·99	7	Au	1	·52
3337	293	158	16M	·0496	8·7178	4·179	**236**	6	5	Mr	24	·77	7	Ap	23●○	·30	1	My	22	·83	3	Je	21	·36	{ 4	Jl	20	·89
																									{ 6	Au	19	·42

Surya Siddhanta.

Asvina			Kartika			Margasira			Pausha			A.D.	Magha			A.D.	Phalguna			Chaitra		
+ 147·65293			+ 177·18353			+ 206·71411			+ 236·24470				+ 266·77528				+ 295·30588			+324·83647 +354·36705		
+ 9·880			+ 11·856			+ 13·832			+ 15·808				+ 17·784				+ 19·760			+ 21·736 + 23·712		
Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction		Week-day Month	Day	Fraction		Week-day Month	Day	Fraction	Week-day Month	Day	Fraction
3 Au	30	·68	5 S	29	·21	6 O	28○	·74	1 N	27○	·27		2 D	26	·80	**98**	4 Jr	25	·33	5 F	23	·83
{1 Au	20	·04	5 O	18○	·10	5 N	16	·64	7 D	16	·17	**99**	1 Jr	84	·70		3 F	13	·23	4 Mr	14	·76
{2 S	18	·57																				
6 S	7	·94	1 O	7●○	·47	3 N	6	·00	4 D	5	·53	**200**	6 Jr	4	·06		7 F	2	·59	2 Mr	3	·12
4 Au	27	·31	5 S	25	·84	7 O	25	·37	1 N	23	·90		3 D	23	·43	**01**	4 Jr	21	·96	6 F	20○	·49
3 S	15	·21	4 O	14	·74	6 N	13	·27	7 D	12	·80	**02**	2 Jr	11	·33		3 F	9○	·86	5 Mr	11●	·39
7 S	4	·57	2 O	4	·10	3 N	2	·63	5 D	2	·16		6 D	31	·70	**03**	1 Jr	30○	·23	2 F	28	·76
4 Au	24	·94	6 S	23	·47	1 O	23	·00	2 N	21	·53		4 D	21	·06	**04**	5 Jr	19	·59	7 F	18	·12
3 S	11	·84	5 O	11	·37	6 N	9	·90	1 D	9○	·43	**05**	2 Jr	7	·96		4 F	6	·49	6 Mr	8	·02
1 S	1	·20	2 S	30	·74	4 O	30	·27	5 N	28○	·80		7 D	28●	·33	**06**	1 Jr	26	·86	3 F	25	·39
5 Au	21	·57	7 S	20	·10	1 O	19	·63	3 N	18○	·16		4 D	17	·69	**07**	6 Jr	16	·22	{7 F	14	·76
																				{2 Mr	16	·29
4 S	9	·47	6 O	9	·00	7 N	7	·53	2 D	7	·06	**08**	3 Jr	5	·59		5 F	4	·12	6 Mr	4	·65
1 Au	28	·84	3 S	27	·37	4 O	26●	·90	6 N	25	·43		7 D	24	·96	**09**	2 Jr	23	·49	4 F	22	·02
7 S	16○	·73	2 O	16●	·26	3 N	14	·80	5 D	14	·33	**10**	6 Jr	12	·86		1 F	11	·39	2 Mr	12●○	·92
5 S	6○	·10	6 O	5	·63	1 N	4	·16	2 D	3	·69	**11**	4 Jr	2	·22		5 Jr	31	·75	7 Mr	2●	·28
2 Au	26●	·47	4 S	25	·00	5 O	24	·53	7 N	23	·06		1 D	22	·59	**12**	3 Jr	21○	·12	4 F	19	·65
1 S	13	·37	2 O	12	·90	4 N	11	·43	5 D	10	·96	**13**	7 Jr	9○	·49		2 F	8	·02	3 Mr	9	·55
5 S	2	·73	7 O	2	·26	1 O	31	·79	3 N	30	·32		4 D	29○	·86	**14**	6 Jr	28	·39	7 F	26	·92
3 Au	23	·10	4 S	21	·63	6 O	21	·16	7 N	19	·69		2 D	19	·22	**15**	3 Jr	17	·75	5 F	16	·28
2 S	11	·00	3 O	10	·53	5 N	9	·06	6 D	8	·59	**16**	1 Jr	7	·12		2 F	5	·65	4 Mr	6	·18
6 Au	30	·36	7 S	28	·90	2 O	28○	·43	3 N	26	·96		5 D	26	·49	**17**	7 Jr	25	·02	1 F	23	·55
{3 Au	19	·73	6 O	17●○	·79	1 N	16	·32	2 D	15	·85	**18**	4 Jr	14	·38		5 F	12	·92	7 Mr	14	·45
{5 S	18	·26																				
2 S	7	·63	4 O	7●○	·16	5 N	5	·69	7 D	5	·22	**19**	1 Jr	3	·75		3 F	2	·28	4 Mr	3○	·81
7 Au	28○	·00	1 S	26	·53	3 O	26	·06	4 N	24	·59		6 D	24	·12	**20**	7 Jr	22	·65	2 F	21○	·18
5 S	14	·89	7 O	14	·42	1 N	12	·96	3 D	12	·49	**21**	5 Jr	11	·02		6 F	9○	·55	1 Mr	11	·08
3 S	4	·26	4 O	3	·79	6 N	2	·32	7 D	1	·85		2 D	31	·38	**22**	3 Jr	29●	·91	5 F	28	·44
7 Au	24	·63	2 S	23	·16	3 O	22	·69	5 N	21	·22		6 D	20○	·75	**23**	1 Jr	19●	·28	2 F	17	·81
6 S	12	·53	1 O	12	·06	2 N	10	·59	4 D	10○	·12	**24**	5 Jr	8●	·65		7 F	7	·18	1 Mr	7	·71
3 Au	31	·89	5 S	30	·42	6 O	29	·95	1 N	28○	·48		3 D	28	·02	**25**	4 Jr	26	·55	6 F	25	·08
1 Au	21	·26	2 S	19	·79	4 O	19	·32	5 N	17●	·85		7 D	17	·38	**26**	1 Jr	15	·91	{3 F	14	·44
																				{4 Mr	15	·97
7 S	9	·16	1 O	8	·69	3 N	7●	·22	4 D	6	·75	**27**	6 Jr	5	·28		7 F	3	·81	2 Mr	5	·34
4 Au	29	·52	6 S	28○	·06	7 O	27	·59	2 N	26	·12		3 D	25	·65	**28**	5 Jr	24	·18	6 F	22	·71
3 S	16○	·42	4 O	15	·95	6 N	14	·48	1 D	14	·01	**29**	2 Jr	12	·54		4 F	11	·08	5 Mr	12●	·61
7 S	5	·79	2 O	5	·32	3 N	3	·85	5 D	3	·38	**30**	6 Jr	1	·91		1 Jr	31○	·44	2 Mr	1	·97
5 Au	26●	·16	6 S	24	·69	1 O	24	·22	2 N	22	·75		4 D	22	·28	**31**	5 Jr	20○	·81	7 F	19	·34
4 S	14	·05	5 O	13	·58	7 N	12	·12	1 D	11	·65	**32**	3 Jr	10●○	·18		4 F	8	·71	6 Mr	9	·24
1 S	2	·42	2 O	1	·95	4 O	31	·48	6 N	30	·01		7 D	29●	·54	**33**	2 Jr	28	·07	3 F	26	·60
5 Au	22	·79	7 S	21	·32	1 O	20	·85	3 N	19	·38		4 D	18	·91	**34**	6 Jr	17	·44	7 F	15	·97
4 S	10	·69	6 O	10	·22	7 N	8○	·75	2 D	8	·28	**35**	3 Jr	6	·81		5 F	5	·34	6 Mr	6	·87
2 Au	31	·05	3 S	29	·58	5 O	29●○	·11	6 N	27	·64		1 D	27	·18	**36**	2 Jr	25	·71	4 F	24	·24
7 S	17	·95	2 O	17●○	·48	4 N	16	·01	5 D	15	·54	**37**	7 Jr	14	·07		1 F	12	·60	3 Mr	14	·13

☉'s Anom col. 6: + 29·53059 (Jyeshta), + 59·06117 (Ashada), + 88·59176 (Sravana), + 118·12235 (Bhadrapada)

☾'s Anom col. 7: + 1·976 (Jyeshta), + 3·952 (Ashada), + 5·928 (Sravana), + 7·904 (Bhadrapada)

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month	Ashada Day	Ashada Fraction	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
3338	294	159	16M	·3084	27·3567	2·312	**237**	1	4	Ap	12●	·66	6	My	12	·20	7	Je	10	·73	2	Jl	10	·26	3	Au	8	·79
3339	295	160	16M	·5671	16·4650	26·024	**238**	2	2	Ap	2●	·03	3	My	1	·56	5	My	31	·09	6	Je	29	·62	1	Jl	29	·15
3340	296	161	16M	·8259	5·5733	22·181	**239**	3	6	Mr	22	·40	7	Ap	20	·93	2	My	20	·46	3	Je	18	·99	7	Au	17●○	·05
																					5	Jl	18	·52				
3341	297	162	16M	·0847	24·2121	20·315	**240**	4	5	Ap	9	·30	6	My	8	·83	1	Je	7	·36	2	Jl	6	·89	4	Au	5●	·42
3342	298	163	16M	·3434	13·3204	16·472	**241**	6	2	Mr	29	·66	4	Ap	28	·19	5	My	27	·72	7	Je	26○	·26	1	Jl	25	·79
3343	299	164	16M	·6022	2·4287	12·629	**242**	7	7	Mr	19	·03	1	Ap	17	·56	4	Je	15●○	·62	6	Jl	15	·15	7	Au	13	·68
													3	My	17	·09												
3344	300	165	16M	·8609	21·0676	10·762	**243**	1	5	Ap	7	·93	7	My	6	·46	1	Je	4●○	·99	3	Jl	4	·52	5	Au	3	·05
3345	301	166	16M	·1197	10·1759	6·920	**244**	2	3	Mr	26	·30	4	Ap	24	·83	6	My	24●	36	7	Je	22	·89	2	Jl	22	·42
3346	302	167	16M	·3784	28·8148	5·053	**245**	4	2	Ap	14○	·19	3	My	13	·72	5	Je	12	·25	6	Jl	11	·78	1	Au	10	·32
3347	303	168	16M	·6372	17·9231	1·210	**246**	5	6	Ap	3●○	·56	1	My	3	·09	2	Je	1	·62	4	Jl	1	·15	5	Jl	30	·68
3348	304	169	16M	·8959	7·0314	24·922	**247**	6	3	Mr	23●	·93	5	Ap	22	·46	6	My	21	·99	1	Je	20	·52	4	Au	18	·58
																					3	Jl	20	·05				
3349	305	170	16M	·1547	25·6703	23·055	**248**	7	2	Ap	10	·82	4	My	10	·36	5	Je	8	·89	7	Jl	8	·42	1	Au	6	·95
3350	306	171	16M	·4135	14·7786	19·213	**249**	2	7	Mr	31	·19	1	Ap	29	·72	3	My	29	·25	4	Je	27	·78	6	Jl	27○	·31
3351	307	172	16M	·6722	3·8869	15·370	**250**	3	4	Mr	20	·56	6	Ap	19	·09	7	My	18	·62	3	Jl	16○	68	5	Au	15	·21
																	2	Je	17	·15								
3352	308	173	16M	·9310	22·5258	13·503	**251**	4	3	Ap	8	·46	4	My	7	·99	6	Je	6	·52	1	Jl	6●	·05	2	Au	4	·58
3353	309	174	16M	·1897	11·6341	9·660	**252**	5	7	Mr	27	·82	2	Ap	26	·35	3	My	25○	·88	5	Je	24●	·41	6	Jl	23	·95
3354	310	175	16M	·4485	0·7424	5·818	**253**	7	5	Mr	17	·19	1	My	15○	·25	2	Je	13●	·78	4	Jl	13	·31	5	Au	11	·84
									6	Ap	15	·72																
3355	311	176	16M	·7072	19·3813	3·951	**254**	1	4	Ap	5	·09	5	My	4●○	·62	7	Je	3	·15	1	Jl	2	·68	3	Au	1	·21
3356	312	177	16M	·9660	8·4896	0·108	**255**	2	1	Mr	25	·45	2	Ap	23●	·99	4	My	23	·52	6	Je	22	·05	7	Jl	21	·58
																									2	Au	20	·11
3357	313	178	16M	·2248	27·1285	25·796	**256**	3	7	Ap	12●	·35	1	My	11	·88	3	Je	10	·41	4	Jl	9	·94	6	Au	8	·47
3358	314	179	16M	·4835	16·2368	21·953	**257**	5	4	Ap	1	·72	6	My	1	·25	7	My	30	·78	2	Je	29	·31	3	Jl	28	·84
3359	315	180	16M	·7423	5·3451	18·110	**258**	6	2	Mr	22	·09	3	Ap	20	·62	5	My	20	·15	6	Je	18	·68	2	Au	16●	·74
																					1	Jl	18	·21				
3360	316	181	17M	·0010	23·9839	16·244	**259**	7	7	Ap	9	·98	2	My	9	·51	4	Je	8	·05	5	Jl	7○	·58	7	Au	6●	·11
3361	317	182	16M	·2598	13·0922	12·401	**260**	1	5	Mr	29	·35	6	Ap	27	·88	1	My	27	·41	2	Je	25○	·94	4	Jl	25	·47
3362	318	183	16M	·5185	2·2005	8·558	**261**	3	2	Mr	18	·72	4	Ap	17	·25	7	Je	15●	·31	1	Jl	14	·84	3	Au	13	·37
													5	My	16	·78												
3363	319	184	16M	·7773	20·8394	6·691	**262**	4	1	Ap	6	·62	3	My	6	·15	4	Je	4●	·68	6	Jl	4	·21	7	Au	2	·74
3364	320	185	17M	·0361	9·9477	2·849	**263**	5	5	Mr	26	·98	7	Ap	25○	·51	2	My	25	·04	3	Je	23	·57	5	Jl	23	·11
3365	321	186	16M	·2948	28·5866	0·982	**264**	6	4	Ap	13●○	·88	6	My	13	·41	7	Je	11	·94	2	Jl	11	·47	4	Au	10	·00
3366	322	187	16M	·5536	17·6949	24·694	**265**	1	2	Ap	3●○	·25	3	My	2	·78	5	Je	1	·31	6	Je	30	·84	1	Jl	30	·37
3367	323	188	16M	·8123	6·8032	20·851	**266**	2	6	Mr	23●	·61	1	Ap	22	·15	2	My	21	·68	4	Je	20	·21	7	Au	18	·27
																					5	Jl	19	·74				
3368	324	189	17M	·0711	25·4421	18·984	**267**	3	5	Ap	11	·51	7	My	11	·04	1	Je	9	·57	3	Jl	9	·10	4	Au	7○	·63
3369	325	190	16M	·3298	14·5504	15·141	**268**	4	2	Mr	30	·88	4	Ap	29	·41	5	My	28	·94	7	Je	27	·47	2	Jl	27○	·00
3370	326	191	16M	·5886	3·6587	11·299	**269**	6	7	Mr	20	·25	1	Ap	18	·78	3	My	18	·31	6	Jl	16●	·37	7	Au	14	·90
																	4	Je	16	·84								
3371	327	192	16M	·8473	22·2975	9·432	**270**	7	6	Ap	8	·14	7	My	7	·67	2	Je	6○	·21	3	Jl	5●	·74	5	Au	4	·27
3372	328	193	17M	·1061	11·4059	5·589	**271**	1	3	Mr	28	·51	5	Ap	27	·04	6	My	26○	·57	1	Je	25●	·10	2	Jl	24	·63
3373	329	194	16M	·3649	0·5142	1·747	**272**	2	7	Mr	16	·88	3	My	14○	·94	5	Je	13	·47	7	Jl	13	·00	1	Au	11	·53
									2	Ap	15	·41																
3374	330	195	16M	·6236	19·1531	27·434	**273**	4	6	Ap	4	·78	1	My	4●	·31	2	Je	2	·84	4	Jl	2	·37	5	Jl	31	·90
3375	331	196	16M	·8824	8·2614	23·592	**274**	5	4	Mr	25○	·14	5	Ap	23●	·67	7	My	23	·20	1	Je	21	·73	3	Jl	21	·27
																									4	Au	19	·80
3376	332	197	17M	·1411	26·9002	21·725	**275**	6	3	Ap	13	·04	4	My	12	·57	6	Je	11	·10	7	Jl	10	·63	2	Au	9	·16
3377	333	198	16M	·3999	16·0085	17·882	**276**	7	7	Ap	1	·41	1	Ap	30	·94	3	My	30	·47	5	Je	29	·00	6	Jl	28	·53

Surya Siddhanta.

+ 147·65293 + 9·880				+ 177·18353 + 11·856				+ 206·71411 + 13·832				+ 236·24470 + 15·808					+ 265·77529 + 17·784					+ 295·30588 + 19·760				{ +324·83647 { +354·36705 { + 21·736 { + 23·712			
Asvina				**Kartika**				**Margasira**				**Pausha**				**A.D.**	**Magha**				**A.D.**	**Phalguna**				**Chaitra**			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	7○	·32	6	O	6	·85	1	N	5	·38	2	D	4	·91	**38**	4	Jr	3	·44		5	F	1	·97	7	Mr	3○	·50
2	Au	27○	·68	4	S	26	·22	5	O	25	·75	7	N	24	·28		1	D	23	·81	**39**	3	Jr	22	·34	4	F	20○	·87
1	S	15	·58	3	O	15	·11	4	N	13	·64	6	D	13	·17	**40**	7	Jr	11	·70		2	F	10○	·24	3	Mr	10	·77
5	S	3	·95	7	O	3	·48	2	N	2	·01	3	D	1	·54		5	D	31○	·07	**41**	6	Jr	29●	·60	1	F	28	·13
3	Au	24	·32	4	S	22	·85	6	O	22	·38	7	N	20	·91		2	D	20○	·44	**42**	3	Jr	18	·97	5	F	17	·50
2	S	12	·21	3	O	11	·74	5	N	10	·28	6	D	9○	·81	**43**	1	Jr	8	·34		2	F	6	·87	4	Mr	8	·40
6	S	1	·58	1	O	1	·11	2	O	30	·64	4	N	29	·17		5	D	28	·70	**44**	7	Jr	27	·23	1	F	25	·76
3	Au	20	·95	5	S	19	·48	7	O	19	·01	1	N	17	·54		3	D	17	·07	**45**	4	Jr	15	·60	{ 6	F	14	·13
																										{ 7	Mr	15	·66
2	S	8	·85	4	O	8○	·38	5	N	6●	·91	7	D	6	·44	**46**	1	Jr	4	·97		3	F	3	·50	5	Mr	5	·03
7	Au	29	·21	1	S	27○	·74	3	O	27	·27	4	N	25	·80		6	D	25	·34	**47**	7	Jr	23	·87	2	F	22	·40
6	S	17	·11	7	O	16	·64	2	N	15	·17	3	D	14	·70	**48**	5	Jr	13	·23		6	F	11○	·76	1	Mr	12	·29
3	S	5●	·48	5	O	5	·01	6	N	3	·54	1	D	3	·07	**49**	2	Jr	1	·60		4	Jr	31○	·13	5	Mr	1	·66
7	Au	25●	·84	2	S	24	·38	3	O	23	·91	5	N	22	·44		6	D	21	·97	**50**	1	Jr	20●○	·50	3	F	19	·03
6	S	13	·74	1	O	13	·27	2	N	11	·80	4	D	11	·33	**51**	5	Jr	9●	·86		7	F	8	·40	1	Mr	9	·93
4	S	3	·11	5	O	2	·64	7	N	1	·17	1	N	30	·70		3	D	30	·23	**52**	4	Jr	28	·76	6	F	27	·29
1	Au	22	·48	3	S	21	·01	4	O	20	·54	6	N	19○	·07		7	D	18	·60	**53**	2	Jr	17	·13	3	F	15	·66
7	S	10	·37	1	O	9	·90	3	N	8○	·43	4	D	7	·97	**54**	6	Jr	6	·50		1	F	5	·03	2	Mr	6	·56
4	Au	30	·74	6	S	29	·27	7	O	28●○	·80	2	N	27	·33		3	D	26	·86	**55**	5	Jr	25	·39	6	F	23	·92
3	S	18○	·64	5	O	18	·17	6	N	16	·70	1	D	16	·23	**56**	2	Jr	14	·76		4	F	13	·29	5	Mr	13○	·82
1	S	7○	·01	2	O	6	·54	4	N	5	·07	5	D	4	·60	**57**	7	Jr	3	·13		1	F	1	·66	3	Mr	3○	·19
5	Au	27●○	·37	6	S	25	·90	1	O	25	·43	2	N	23	·96		4	D	23	·49	**58**	6	Jr	22	·03	7	F	20	·56
4	S	15	·27	5	O	14	·80	7	N	13	·33	1	D	12	·86	**59**	3	Jr	11○	·39		4	F	9	·92	6	Mr	11	·45
1	S	4	·64	3	O	4	·17	4	N	2	·70	6	D	2	·23		7	D	31○	·76	**60**	2	Jr	30●	·29	3	F	28	·82
6	Au	24	·00	7	S	22	·53	2	O	22	·07	3	N	20	·60		5	D	20○	·13	**61**	6	Jr	18	·66	1	F	17	·19
4	S	11	·90	6	O	11	·43	7	N	9	·96	2	D	9	·49	**62**	4	Jr	8	·02		5	F	6	·55	7	Mr	8	·09
2	S	1	·27	3	S	30	·80	5	O	30	·33	6	N	28●	·86		1	D	28	·39	**63**	2	Jr	26	·92	4	F	25	·45
6	Au	21	·64	{ 1	S	20	·17	**Margasira Kshaya.**				4	N	18●	·23		5	D	17	·76	**64**	7	Jr	16	·29	{ 1	F	14	·82
				{ 2	O	19○	·70																			{ 3	Mr	15	·35
5	S	8	·53	7	O	8○	·06	1	N	6	·59	3	D	6	·13	**65**	4	Jr	4	·66		6	F	3	19	7	Mr	4	·72
2	Au	28	·90	4	S	27○	·43	5	O	26	·96	7	N	25	·49		2	D	25	·02	**66**	3	Jr	23	·55	5	F	22○	·08
1	S	16●	·80	3	O	16	·33	4	N	14	·86	6	D	14	·39	**67**	7	Jr	12	·92		2	F	11○	·45	3	Mr	12	·98
6	S	6●	·17	7	O	5	·70	2	N	4	·23	3	D	3	·76	**68**	5	Jr	2	·29		6	Jr	31●○	·82	1	Mr	1	·35
3	Au	25	·53	5	S	24	·06	6	O	23	·59	1	N	22	·12		2	D	21	·65	**69**	4	Jr	20	·19	5	F	18	·72
2	S	13	·43	3	O	12	·96	5	N	11	·49	7	D	11	·02	**70**	7	Jr	9	·55		3	F	8	·08	4	Mr	9	·61
6	S	2	·80	1	O	2	·33	2	O	31	·86	4	N	30○	·39		5	D	29	·92	**71**	7	Jr	28	·45	1	F	26	·98
4	Au	23	·16	5	S	21	·69	7	O	21	·22	1	N	19●○	·76		3	D	19	·29	**72**	4	Jr	17	·82	6	F	16	·35
3	S	10	·06	4	O	9	·59	6	N	8●○	·12	7	D	7	·65	**73**	2	Jr	6	·18		3	F	4	·71	5	Mr	6	·25
7	Au	30	·43	1	S	28○	·96	3	O	28	·49	5	N	27	·02		6	D	26	·55	**74**	1	Jr	25	·08	2	F	23	·61
6	S	18○	·33	7	O	17	·86	2	N	16	·39	3	D	15	·92	**75**	5	Jr	14	·45		6	F	12	·98	1	Mr	14○	·51
3	S	7●○	·69	5	O	7	·22	6	N	5	·75	1	D	5	·29	**76**	2	Jr	3	·82		4	F	2	·35	5	Mr	2●○	88
1	Au	27●	·06	2	S	25	·59	4	O	25	·12	5	N	23	·65		7	D	23	·18	**77**	1	Jr	21○	·71	3	F	20●	24

TABLE X—

									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12225			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon	A D.	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3378	334	199	16M	·6586	5·1168	14·039	**277**	2	4	Mr	21	·77	6	Ap	20	·30	7	My	19	·84	2	Je	18	·33	5	Au	16	·43
																					3	Jl	17	·90				
3379	335	200	16M	·9174	23·7557	12·173	**278**	3	3	Ap	9	·67	5	My	9	·20	6	Je	7	·73	1	Jl	7○	·26	2	Au	5	·79
3380	336	201	17M	·1762	12·8640	8·330	**279**	4	1	Mr	30	·04	2	Ap	28	·57	4	My	28	·10	5	Je	26●○	·63	7	Jl	26	·16
3381	337	202	16M	·4349	1·9723	4·487	**280**	5	5	Mr	18	·41	6	Ap	16	·94	3	Je	15●	·00	4	Jl	14	·53	6	Au	13	·06
													1	My	16	·47												
3382	338	203	16M	·6937	20·6112	8·620	**281**	7	4	Ap	6	·30	5	My	5○	·83	7	Je	4	·37	1	Jl	3	·90	3	Au	2	·43
3383	339	204	16M	·9524	9·7195	26·332	**282**	1	1	Mr	26	·67	3	Ap	25●○	·20	4	My	24	·73	6	Je	23	·26	7	Jl	22	·79
3384	340	205	17M	·2112	28·3584	24·465	**283**	2	7	Ap	14●○	·57	2	My	14	·10	3	Je	12	·63	5	Jl	12	·16	6	Au	10	·69
3385	341	206	16M	·4699	17·4667	20·623	**284**	3	4	Ap	2●	·94	6	My	2	·47	1	Je	1	·00	2	Je	30	·53	4	Jl	30	·06
3386	342	207	16M	·7287	6·5750	16·780	**285**	5	2	Mr	23	·30	3	Ap	21	·83	5	My	21	·36	6	Je	19	·89	2	Au	17○	·96
																					1	Jl	19	·42				
3387	343	208	16M	·9875	25·2139	14·913	**286**	6	1	Ap	11	·20	2	My	10	·73	4	Je	9	·26	5	Jl	8	·79	7	Au	7○	·32
3388	344	209	17M	·2462	14·3222	11·070	**287**	7	5	Mr	31	·57	7	Ap	30	·10	1	My	29	·63	3	Je	28	·16	4	Jl	27●○	·69
3389	345	210	16M	·5050	3·4305	7·228	**288**	1	2	Mr	19	·93	4	Ap	18	·47	7	Je	16○	·53	2	Jl	16●	·06	3	Au	14	·59
													6	My	18	·00												
3390	346	211	16M	·7637	22·0694	5·361	**289**	3	1	Ap	7	·83	3	My	7	·36	4	Je	5○	·89	6	Jl	5●	·42	7	Au	3	·95
3391	347	212	17M	·0225	11·1777	1·514	**290**	4	6	Mr	28	·20	7	Ap	26	·73	2	My	26○	·26	3	Je	24	·79	5	Jl	24	·32
3392	348	213	17M	·2812	0·2860	25·230	**291**	5	3	Mr	17	·57	6	My	15●	·63	1	Je	14	·16	2	Jl	13	·69	4	Au	12	·22
									5	Ap	16	·10																
3393	349	214	16M	·5400	18·9249	23·363	**292**	6	2	Ap	4○	·46	3	My	3●	·99	5	Je	2	·53	7	Jl	2	·06	1	Jl	31	·59
3394	350	215	16M	·7987	8·0332	19·521	**293**	1	6	Mr	24○	·83	1	Ap	23	·36	2	My	22	·89	4	Je	21	·42	5	Jl	20	·95
																									7	Au	19	·48
3395	351	216	17M	·0575	26·6720	17·654	**294**	2	5	Ap	12	·73	7	My	12	·26	1	Je	10	·79	3	Jl	10	·32	4	Au	8	·85
3396	352	217	17M	·3163	15·7803	13·811	**295**	3	3	Ap	2	·10	4	My	1	·63	6	My	31	·16	7	Je	29	·69	2	Jl	29	·22
3397	353	218	16M	·5750	4·8886	9·968	**296**	4	7	Mr	21	·46	1	Ap	19	·99	3	My	19	·52	6	Jl	17○	·59	1	Au	16	·12
																	5	Je	18	·05								
3398	354	219	16M	·8338	23·5275	8·102	**297**	6	6	Ap	9	·36	7	My	8	·89	2	Je	7	·42	3	Jl	6●○	·95	5	Au	5	·48
3399	355	220	17M	·0925	12·6358	4·259	**298**	7	3	Mr	29	·73	5	Ap	28	·26	6	My	27	·79	1	Je	26●	·32	2	Jl	25	·85
3400	356	221	17M	·3513	1·7441	0·416	**299**	1	1	Mr	19	·09	2	Ap	17	·63	5	Je	15	·69	7	Jl	15	·22	1	Au	13	·75
													4	My	17○	·16												
3401	357	222	16M	·6100	20·3830	26·104	**300**	2	6	Ap	5	·99	1	My	5●○	·52	3	Je	4	·05	4	Jl	3	·58	6	Au	2	·11
3402	358	223	16M	·8688	9·4913	22·261	**301**	4	4	Mr	26	·36	5	Ap	24●○	·89	7	My	24	·42	1	Je	22	·95	3	Jl	22	·48
3403	359	224	17M	·1276	28·1302	20·394	**302**	5	3	Ap	14	·26	4	My	13	·79	6	Je	12	32	7	Jl	11	·85	2	Au	10	·38
3404	360	225	17M	·3863	17·2385	16·552	**303**	6	7	Ap	3	·62	2	My	3	·15	3	Je	1	·69	5	Jl	1	·22	6	Jl	30	·75
3405	361	226	16M	·6451	6·3468	12·709	**304**	7	4	Mr	22	·99	6	Ap	21	·52	1	My	21	·05	2	Je	19	·58	5	Au	17○	·64
																					4	Jl	19	·11				
3406	362	227	16M	·9038	24·9860	10·842	**305**	2	3	Ap	10	·89	5	My	10	·42	6	Je	8	·95	1	Jl	8	·48	3	Au	7●○	·01
3407	363	228	17M	·1626	14·0940	6·999	**306**	3	1	Mr	31	·26	2	Ap	29	·79	4	My	29	·32	5	Je	27○	·85	7	Jl	27●	·38
3408	364	229	17M	·4213	3·2023	3·157	**307**	4	5	Mr	20	·64	7	Ap	19	·15	3	Je	17○	·21	4	Jl	16●	·75	6	Au	15	·28
													1	My	18	·68												
3409	365	230	16M	·6801	21·8412	1·290	**308**	5	4	Ap	7	·52	6	My	7	·05	7	Je	5○	·58	2	Jl	5	·11	3	Au	3	·64
3410	366	231	16M	·9389	10·9495	25·002	**309**	7	1	Mr	27	·89	3	Ap	26	·42	4	My	25	·95	6	Je	24	·48	1	Jl	24	·01
3411	367	232	17M	·1976	0·0578	21·159	**310**	1	6	Mr	17	·25	2	My	15	·32	3	Je	13	·85	5	Jl	13	·38	6	Au	11	·91
									7	Ap	15○	·79																
3412	368	233	17M	·4564	18·6966	19·292	**311**	2	5	Ap	5○	·15	6	My	4	·68	1	Je	3	·21	2	Jl	2	·74	4	Au	1	·27
3413	369	234	16M	·7151	7·8049	15·450	**312**	3	2	Mr	24○	·52	4	Ap	23	·05	5	My	22	·58	7	Je	21	·11	1	Jl	20	·64
																									3	Au	19	·17
3414	370	235	16M	·9739	26·4438	13·583	**313**	5	1	Ap	12	·42	2	My	11	·95	4	Je	10	·48	6	Jl	10	·01	7	Au	8	·54
3415	371	236	17M	·2326	15·5521	9·740	**314**	6	5	Ap	1	·78	7	My	1	·31	1	My	30	·85	3	Je	29	·38	4	Jl	28○	·91
3416	372	237	17M	·4914	4·6604	5·897	**315**	7	3	Mr	22	·15	4	Ap	20	·68	6	My	20	·21	2	Jl	18○	·27	3	Au	16	·80
																	7	Je	18	·74								

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·20588				{+324·83647 +354·36705}			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{+ 21·736 + 23·712}			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	14	·96	1	O	14	·49	3	N	13	·02	4	D	12	·55	**78**	6	Jr	11○	·08		7	F	9●	·61	2	Mr	11	·14
4	S	4	·33	5	O	3	·86	7	N	2	·39	1	D	1	·92		3	D	31○	·45	**79**	4	Jr	29	·98	6	F	28	·51
1	Au	24	·69	3	S	23	·22	4	O	22	·75	6	N	21	·28		7	D	20●	·81	**80**	2	Jr	19	·35	3	F	17	·88
7	S	11	·59	2	O	11	·12	3	N	9	·65	5	D	9●	·18	**81**	6	Jr	7	·71		1	F	6	·24	2	Mr	7	·77
4	Au	31	·96	6	S	30	·46	1	O	30○	·02	2	N	28	·55		4	D	28	·08	**82**	5	Jr	26	·61	7	F	25	·14
{2	Au	21	·32	5	O	19○	·36	**Margasira Kshaya.**				6	N	17	·92		1	D	17	·45	**83**	2	Jr	15	·98	{4	F	14	·51
{3	S	19	·85																							{6	Mr	16	·04
1	S	9	·22	2	O	8●○	·75	4	N	7	·28	5	D	6	·81	**84**	7	Jr	5	·34		1	F	3	·87	3	Mr	4	·41
5	Au	28	·59	7	S	27●	·12	1	O	26	·65	3	N	25	·18		4	D	24	·71	**85**	6	Jr	23	·24	7	F	21○	·77
4	S	16●	·49	6	O	16	·02	7	N	14	·55	2	D	14	·08	**86**	3	Jr	12	·61		5	F	11●○	·14	6	Mr	12	·67
1	S	5	·85	3	O	5	·38	4	N	3	·91	6	D	3	·45	**87**	7	Jr	1	·98		2	Jr	31●	·51	4	Mr	2	·04
6	Au	26	·22	7	S	24	·75	2	O	24	·28	3	N	22	·81		5	D	22	·34	**88**	6	Jr	20	·87	1	F	19	·40
5	S	13	·12	6	O	12	·65	1	N	11	·18	2	D	10○	·71	**89**	4	Jr	9	·24		5	F	7	·77	7	Mr	9	·30
2	S	2	·49	4	O	2	·02	5	O	31	·55	7	N	30●○	·08		1	D	29	·61	**90**	3	Jr	28	·14	4	F	26	·67
6	Au	22	·85	1	S	21	·38	2	O	20	·91	4	N	19●○	·44		5	D	18	·97	**91**	7	Jr	17	·51	2	F	16	·04
5	S	10	·75	7	O	10○	·28	1	N	8	·81	3	D	8	·34	**92**	4	Jr	6	·87		6	F	5	·40	7	Mr	5	·93
3	Au	30	·12	4	S	28○	·65	6	O	28	·18	7	N	26	·71		2	D	26	·24	**93**	3	Jr	24	·77	5	F	23	·30
2	S	18●○	·01	3	O	17	·55	5	N	16	·08	6	D	15	·61	**94**	1	Jr	14	·14		2	F	12	·67	4	Mr	14●○	·20
6	S	7●	·38	7	O	6	·91	2	N	5	·44	3	D	4	·97	**95**	5	Jr	3	·50		7	F	2○	·03	1	Mr	3●	·57
3	Au	27	·75	5	S	26	·28	6	O	25.	·81	1	N	24	·34		2	D	23	·87	**96**	4	Jr	22○	·40	5	F	20	·93
2	S	14	·65	4	O	14	·18	5	N	12	·71	7	D	12	·24	**97**	1	Jr	10○	·77		3	F	9	·30	4	Mr	10	·83
7	S	4	·01	1	O	3	·54	3	N	2	·07	4	D	1	·61		6	D	31●	·14	**98**	7	Jr	29	·67	2	F	28	·20
4	Au	24	·38	5	S	22	·91	7	O	22	·44	1	N	20	·97		3	D	20●	·50	**99**	5	Jr	19	·03	6	F	17	·56
3	S	12	·28	4	O	11	·81	6	N	10○	·34	7	D	9●	·87	**300**	3	Jr	8	·40		4	F	6	·93	6	Mr	7	·46
7	Au	31	·65	2	S	30	·18	3	O	29○	·71	5	N	28	·24		6	D	27	·77	**01**	1	Jr	26	·30	2	F	24	·83
{5	Au	21	·01	1	O	19○	·07	2	N	17	·60	4	D	17	·13	**02**	5	Jr	15	·67		7	F	14	·20	1	Mr	15	·73
{6	S	19	·54																										
3	S	8	·91	5	O	8●	·44	6	N	6	·97	1	D	6	·50	**03**	3	Jr	5	·03		4	F	3	·56	6	Mr	5○	·09
1	Au	29○	·28	2	S	27	·81	4	O	27	·34	5	N	25	·87		7	D	25	·14	**04**	1	Jr	23	·93	3	F	22●○	·46
7	S	16	·17	1	O	15	·71	3	N	14	·24	4	D	13	·77	**05**	6	Jr	12	·30		7	F	10	·83	2	Mr	12	·36
4	S	5	·54	6	O	5	·07	7	N	3	·60	2	D	3	·13	**06**	3	Jr	1	·66		5	Jr	31	·19	6	Mr	1	·73
1	Au	25	·91	3	S	24	·44	4	O	23	·97	6	N	22	·50		1	D	22○	·03	**07**	2	Jr	20	·56	4	F	19	·09
7	S	13	·81	2	O	13	·34	3	N	11	·87	5	D	11○	·40	**08**	6	Jr	9	·93		1	F	8	·46	2	Mr	8	·99
5	S	2	·17	6	O	1	·70	1	O	31	·23	2	N	29●○	·77		4	D	29	·30	**09**	5	Jr	27	·83	7	F	26	·36
2	Au	22	·54	4	S	21	·07	5	O	20	·60	7	N	19	·13		1	D	18	·66	**10**	3	Jr	17	·19	4	F	15	·72
1	S	10	·44	2	O	9○	·97	4	N	8	·50	6	D	8	·03	**11**	7	Jr	6	·56		2	F	5	·09	3	Mr	6	·62
5	Au	30	·81	7	S	29○	·34	1	O	28	·87	3	N	27	·40		4	D	26	·93	**12**	6	Jr	25	·46	7	F	23	·99
4	S	17	·70	6	O	17	·23	7	N	15	·76	2	D	15	·29	**13**	3	Jr	13	·83		5	F	12○	·36	6	Mr	13	·89
2	S	7●	·07	3	O	6	·60	5	N	5	·13	6	D	4	·66	**14**	1	Jr	3	·19		2	F	1○	·72	4	Mr	3●	·25
6	Au	27	·44	7	S	25	·97	2	O	25	·50	4	N	24	·03		5	D	23	·56	**15**	7	Jr	22○	·09	1	F	20	·62
5	S	15	·33	6	O	14	·87	1	N	13	·40	2	D	12	·93	**16**	4	Jr	11	·46		5	F	9	·99	7	Mr	10	·52

TABLE X—

	☉'s Anom col. 6	☾'s Anom col. 7
Vaisakha		
Jyeshta	+ 29·53059	+ 1·976
Ashada	+ 59·06117	+ 3·952
Sravana	+ 88·59176	+ 5·928
Bhadrapada	+ 118·12235	+ 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year.		First New-Moon in Solar Year.	Anomaly of first New-Moon	A.D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
			Month and day A.D.	Fraction of day.					Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3417	373	238	16M	·7501	23·2993	4·031	**316**	1	2	Ap	9	·05	3	My	8	·58	5	Je	7	·11	6	Jl	6●	·64	1	Au	5	·17
3418	374	239	17M	·0089	12·4076	0·187	**317**	3	6	Mr	29	·42	7	Ap	27	·95	2	My	27○	·48	4	Je	26	·01	5	Jl	25	·54
3419	375	240	17M	·2677	1·5159	23·900	**318**	4	3	Mr	18	·78	5	Ap	17	·31	1	Je	15	·37	2	Jl	14	·91	4	Au	13	·44
													6	My	16○	·84												
3420	376	241	17M	·5264	20·1548	22·033	**319**	5	2	Ap	6	·68	4	My	6○	·21	5	Je	4	·74	7	Jl	4	·27	1	Au	2	·80
3421	377	242	16M	·7852	9·2631	18·190	**320**	6	7	Mr	26	·05	1	Ap	24●	·58	3	My	24	·11	4	Je	22	·64	6	Jl	22	·17
3422	378	243	17M	·0439	27·9020	16·323	**321**	1	5	Ap	13	·95	7	My	13	·48	2	Je	12	·01	3	Jl	11	·54	5	Au	10	·07
3423	379	244	17M	·3027	17·0103	12·481	**322**	2	3	Ap	3	·31	4	My	2	·84	6	Je	1	·37	7	Je	30	·90	2	Jl	30	·43
3424	380	245	17M	·5614	6·1186	8·638	**323**	3	7	Mr	23	·68	2	Ap	22	·21	3	My	21	·74	5	Je	20	·27	1	Au	18○	·33
																					6	Jl	19	·80				
3425	381	246	16M	·8202	24·7575	6·771	**324**	4	6	Ap	10	·58	1	My	10	·11	2	Je	8	·64	4	Jl	8○	·17	5	Au	6	·70
3426	382	247	17M	·0790	13·8658	2·928	**325**	6	3	Mr	31	·94	5	Ap	29	·47	7	My	29	·01	1	Je	27○	·54	3	Jl	27	·07
3427	383	248	17M	·3377	2·9741	26·640	**326**	7	1	Mr	20	·34	2	Ap	18	·84	5	Je	16○	·90	7	Jl	16	·43	1	Au	14	·96
													4	My	18	·37												
3428	384	249	17M	·5965	21·6130	24·773	**327**	1	7	Ap	8	·21	1	My	7	·74	3	Je	6●	·27	4	Jl	5	·80	6	Au	4	·33
3429	385	250	16M	·8552	10·7213	20·931	**328**	2	4	Mr	27	·58	6	Ap	26○	·11	7	My	25	·64	2	Je	24	·17	3	Jl	23	·70
3430	386	251	17M	·1140	29·3601	19·064	**329**	4	1	Mr	16	·94	5	My	15	·00	6	Je	13	·53	1	Jl	13	·07	2	Au	11	·60
									3	Ap	15○	·47																
3431	387	252	17M	·3727	18·4684	15·221	**330**	5	7	Ap	4○	·84	2	My	4	·37	3	Je	2	·90	5	Jl	2	·43	6	Jl	31	·96
3432	388	253	17M	·6315	7·5767	11·379	**331**	6	5	Mr	25●	·21	6	Ap	23	·74	1	My	23	·27	2	Je	21	·80	4	Jl	21	·33
																									5	Au	19	·86
3433	389	254	16M	·8902	26·2156	9·512	**332**	7	4	Ap	12	·11	5	My	11	·64	7	Je	10	·17	1	Jl	9	·70	3	Au	8○	·23
3434	390	255	17M	·1490	15·3239	5·669	**333**	2	1	Ap	1	·47	3	My	1	·00	4	My	30	·53	6	Je	29	·06	7	Jl	28●○	·59
3435	391	256	17M	·4078	4·4322	1·826	**334**	3	5	Mr	21	·84	7	Ap	20	·37	1	My	19	·90	4	Jl	17●	·96	6	Au	16	·49
																	3	Je	18	·43								
3436	392	257	17M	·6665	23·0711	27·514	**335**	4	4	Ap	9	·74	6	My	9	·27	7	Je	7○	·80	2	Jl	7	·33	3	Au	5	·86
3437	393	258	16M	·9253	12·1794	23·671	**336**	5	2	Mr	29	·10	3	Ap	27	·63	5	My	27○	·17	6	Je	25	·70	1	Jl	25	·23
3438	394	259	17M	·1840	1·2877	19·829	**337**	7	6	Mr	18	·47	1	Ap	17	·00	4	Je	15	·06	5	Jl	14	·59	7	Au	13	·12
													2	My	16○	·53												
3439	395	260	17M	·4428	19·9266	17·962	**338**	1	5	Ap	6	·37	6	My	5●	·90	1	Je	4	·43	2	Jl	3	·96	4	Au	2	·49
3440	396	261	17M	·7015	9·0349	14·119	**339**	2	2	Mr	26○	·74	4	Ap	25	·27	5	My	24	·80	7	Je	23	·33	1	Jl	22	·86
3441	397	262	16M	·9603	27·6738	12·252	**340**	3	1	Ap	13	·63	3	My	13	·16	4	Je	11	·69	6	Jl	11	·23	7	Au	9	·76
3442	398	263	17M	·2191	16·7821	8·410	**341**	5	6	Ap	3	·00	7	My	2	·53	2	Je	1	·06	3	Je	30	·59	5	Jl	30	·12
3443	399	264	17M	·4778	5·8904	4·567	**342**	6	3	Mr	23	·37	4	Ap	21	·90	6	My	21	·43	7	Je	19	·95	4	Au	18	·02
																					2	Jl	19○	·49				
3444	400	265	17M	·7366	24·5293	2·700	**343**	7	2	Ap	11	·27	3	My	10	·80	5	Je	9	·33	6	Jl	8○	·86	1	Au	7	·39
3445	401	266	16M	·9953	13·6376	26·412	**344**	1	6	Mr	30	·63	1	Ap	29	·16	2	My	28	·69	4	Je	27○	·22	5	Jl	26	·75
3446	402	267	17M	·2541	2·7459	22·569	**345**	3	4	Mr	20	·00	5	Ap	18	·53	1	Je	16	·59	3	Jl	16	·12	4	Au	14	·65
													7	My	18	·06												
3447	403	268	17M	·5128	21·3848	20·702	**346**	4	2	Ap	7	·90	4	My	7○	·43	5	Je	5●	·96	7	Jl	5	·49	2	Au	4	·02
3448	404	269	17M	·7716	10·4931	16·860	**347**	5	7	Mr	28	·26	1	Ap	26○	·65	3	My	26	·33	4	Je	24	·86	6	Jl	24	·39
3449	405	270	17M	·0304	29·1319	14·993	**348**	6	6	Ap	15●○	·16	7	My	14	·69	2	Je	13	·22	3	Jl	12	·75	5	Au	11	·28
3450	406	271	17M	·2891	18·2402	11·150	**349**	1	3	Ap	4●	·53	5	My	4	·06	6	Je	2	·59	1	Jl	2	·12	2	Jl	31	·65
3451	407	272	17M	·5479	7·3485	7·307	**350**	9	7	Mr	24	·90	2	Ap	23	·43	3	My	22	·96	5	Je	21	·49	7	Jl	21	·02
																									1	Au	19○	·55
3452	408	273	17M	·8066	25·9874	5·441	**351**	3	6	Ap	12	·79	1	My	12	·32	2	Je	10	·85	4	Jl	10	·39	5	Au	8○	·92
3453	409	274	17M	·0654	15·0957	1·598	**352**	4	4	Ap	1	·16	5	Ap	30	·69	7	My	30	·22	1	Je	28	·75	3	Jl	28○	·28
3454	410	275	17M	·3241	4·2040	25·310	**353**	6	1	Mr	21	·53	3	Ap	20	·06	4	My	19	·59	7	Jl	17●	·65	2	Au	16	·18
																	6	Je	18○	·12								
3455	411	276	17M	·5829	22·8429	23·443	**354**	7	7	Ap	9	·43	1	My	8	·96	3	Je	7○	·49	5	Jl	7	·02	6	Au	5	·55

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{ +324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	3	·70	4	O	3	·23	5	N	1	·76	7	D	1	·29		1	D	30●	·82	**17**	3	Jr	29	·35	4	F	27	·89
7	Au	24	·07	1	S	22	·60	3	O	22	·13	4	N	20○	·66		6	D	20	·19	**18**	7	Jr	18	·72	2	F	17	·25
5	S	11	·97	7	O	11	·50	2	N	10○	·03	3	D	9	·56	**19**	5	Jr	8	·09		6	F	6	·62	1	Mr	8	·15
3	S	1	·33	4	S	30	·86	6	O	30○	·39	7	N	28	·93		2	D	28	·46	**20**	3	Jr	26	·99	5	F	25	·52
{7	Au	20	·70	3	O	18●	·76	5	N	17	·29	6	D	16	·82	**21**	1	Jr	15	·35		2	F	13	·88	4	Mr	15○	·41
{2	S	19	·23																										
6	S	8○	·60	1	O	8	·13	2	N	6	·66	4	D	6	·19	**22**	5	Jr	4	·72		7	F	3	·25	1	Mr	4○	·78
3	Au	28○	·97	5	S	27	·50	7	O	27	·03	1	N	25	·56		3	D	25	·09	**23**	4	Jr	23	·62	6	F	22	·15
2	S	16	·86	4	O	16	·39	5	N	14	·92	7	D	14	·45	**24**	1	Jr	12	·99		3	F	11●	·52	5	Mr	12	·05
7	S	5	·23	1	O	4	·76	3	N	3	·29	4	D	2	·82	**25**	6	Jr	1○	·35		7	Jr	30	·88	2	Mr	1	·41
4	Au	25	·60	6	S	24	·13	7	O	23	·66	2	N	22	·19		3	D	21●○	·72	**26**	5	Jr	20	·25	6	F	18	·78
3	S	13	·49	5	O	13	·03	6	N	11	·56	1	D	11●○	·09	**27**	2	Jr	9	·62		4	F	8	15	5	Mr	9	·68
7	S	2	·80	2	O	2	·39	3	O	31	·92	5	N	30	·45		6	D	29	·98	**28**	1	Jr	28	·51	3	F	27	·05
5	Au	22	·23	6	S	20	·76	1	O	20○	·29	2	N	18	·82		4	D	18	·35	**29**	5	Jr	16	·88	7	F	15	·41
4	S	10	·13	5	O	9●○	·66	7	N	8	·19	1	D	7	·72	**30**	3	Jr	6	·25		4	F	4	·78	6	Mr	6	·31
1	Au	30	·49	3	S	29	·02	4	O	28	·55	6	N	27	·09		7	D	26	·62	**31**	2	Jr	25	·15	3	F	23○	·68
7	S	18	·39	1	O	17	·92	3	N	16	·45	4	D	15	·98	**32**	6	Jr	14	·51		1	F	13○	·04	2	Mr	13●	·57
4	S	6	·76	6	O	6	·29	7	N	4	·82	2	D	4	·35	**33**	3	Jr	2	·88		5	F	1●○	·41	6	Mr	2	·94
2	Au	27	·13	3	S	25	·66	5	O	25	·19	6	N	23	·72		1	D	23	·25	**34**	2	Jr	21●	·78	4	F	20	·31
1	S	15	·02	2	O	14	·55	4	N	13	·08	5	D	12	·61	**35**	7	Jr	11	·15		1	F	9	·68	3	Mr	11	·21
5	S	4	·39	6	O	3	·92	1	N	2	·45	2	D	1○	·98		4	D	31	·51	**36**	6	Jr	30	·04	7	F	28	·57
2	Au	23	·76	4	S	22	·29	5	O	21	·82	7	N	20○	·35		1	D	19	·88	**37**	3	Jr	18	·41	4	F	16	·94
1	S	11	·65	3	O	11	·19	4	N	9○	·72	6	D	9	·25	**38**	7	Jr	7	·78		2	F	6	·31	3	Mr	7	·84
6	S	1	·02	7	S	30	·55	2	O	30	·08	3	N	28	·61		5	D	28	·14	**39**	6	Jr	26	·67	1	F	25	·21
{3	Au	21	·39	6	O	19●	·45	7	N	17	·98	2	D	17	·51	**40**	4	Jr	16	·04		5	F	14	·57	7	Mr	15○	·10
{4	S	19○	·92																										
2	S	8○	·29	3	O	7	·82	5	N	6	·35	6	D	5	·88	**41**	1	Jr	4	·41		2	F	2	·94	4	Mr	4●	·47
6	Au	28○	·65	1	S	27	·18	2	O	26	·71	4	N	25	·25		5	D	24	·78	**42**	7	Jr	23	·31	1	F	21	·84
5	S	16	·55	7	O	16	·08	1	N	14	·61	3	D	14	·14	**43**	4	Jr	12○	·67		6	F	11	·20	7	Mr	12	·73
2	S	5	·92	4	O	5	·45	5	N	3	·98	7	D	3	·51	**44**	2	Jr	2○	·04		3	Jr	31	·57	4	Mr	1	·10
7	Au	25	·29	1	S	23	·82	3	O	23	·35	4	N	21	·88		6	D	21○	·41	**45**	7	Jr	19	·94	2	F	18	·47
6	S	13	·18	7	O	12	·71	2	N	11	·24	3	D	10	·77	**46**	5	Jr	9	·31		6	F	7	·84	1	Mr	9	·37
3	S	2	·55	5	O	2	·08	6	O	31○	·61	1	N	30	·14		2	D	29	·67	**47**	4	Jr	28	·20	5	F	26	·73
7	Au	22	·92	2	S	21	·45	3	O	20○	·98	5	N	19	·51		7	D	19	·04	**48**	1	Jr	17	·57	{3	F	16	·10
																										{4	Mr	16	·63
6	S	9	·81	1	O	9●	·35	2	N	7	·88	4	D	7	·41	**49**	5	Jr	5	·94		7	F	4	·47	2	Mr	6	·00
4	Au	30	·18	5	S	28	·71	7	O	28	·24	1	N	26	·77		3	D	26	·30	**50**	4	Jr	24	·83	6	F	23○	·37
3	S	18	·08	4	O	17	·61	6	N	16	·14	7	D	15	·67	**51**	2	Jr	14	·20		3	F	12○	·73	5	Mr	14	·26
7	S	7	·45	1	O	6	·98	3	N	5	·51	5	D	5	·04	**52**	6	Jr	3	·57		1	F	2●	·10	2	Mr	2	·63
4	Au	26	·81	6	S	25	·34	7	O	24	·87	2	N	23	·41		3	D	22	·94	**53**	5	Jr	21	·47	7	F	20	·00
3	S	14	·71	5	O	14	·24	6	N	12	·77	1	D	12○	·30	**54**	2	Jr	10●	·83		4	F	9	·36	5	Mr	10	·89
1	S	4	·08	2	O	3	·61	4	N	2	·14	5	D	1○	·67		7	D	31	·20	**55**	1	Jr	29	·73	3	F	28	·26

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year: Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha (☉'s Anom col. 6; ☾'s Anom col. 7)				Jyeshta (+ 29·53059; + 1·976)				Ashada (+ 59·06117; + 3·952)				Sravana (+ 88·59176; + 5·928)				Bhadrapada (+ 118·12235; + 7·904)			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3456	412	277	17M	·8416	11·9512	19·600	**355**	1	4	Mr	29	·79	6	Ap	28	·32	7	My	27●○	·85	2	Je	26	·38	3	Jl	25	·91
3457	413	278	17M	·1004	1·0595	15·758	**356**	2	2	Mr	18	·16	3	Ap	16	·69	6	Je	14	·75	1	Jl	14	·28	2	Au	12	·81
													5	My	16	·22												
3458	414	279	17M	·3592	19·6984	13·891	**357**	4	1	Ap	6○	·06	2	My	5	·59	4	Je	4	·12	5	Jl	3	·65	7	Au	2	·18
3459	415	280	17M	·6179	8·8067	10·048	**358**	5	5	Mr	26●○	·42	6	Ap	24	·95	1	My	24	·49	3	Je	23	·02	4	Jl	22	·55
3460	416	281	17M	·8767	27·4459	8·181	**359**	6	4	Ap	14	·32	5	My	13	·85	7	Je	12	·38	1	Jl	11	·91	3	Au	10	·44
3461	417	282	17M	·1354	16·5539	4·339	**360**	7	1	Ap	2	·69	3	My	2	·22	4	My	31	·75	6	Je	30	·28	7	Jl	29	·81
3462	418	283	17M	·3942	5·6622	0·496	**361**	2	6	Mr	28	·30	7	Ap	21	·59	2	My	21	·12	5	Jl	19○	·18	6	Au	17●	·71
																	3	Je	19	·65								
3463	419	284	17M	·6529	24·3011	26·184	**362**	3	4	Ap	10	·95	6	My	10	·48	1	Je	9	·01	2	Jl	8○	·55	4	Au	7	·08
3464	420	285	17M	·9117	13·4094	22·341	**363**	4	2	Mr	31	·32	3	Ap	29	·85	5	My	29	·38	6	Je	27	·91	1	Jl	27	·44
3465	421	286	17M	·1705	2·5177	18·498	**364**	5	6	Mr	19	·69	1	Ap	18	·22	4	Je	16●	·28	5	Jl	15	·81	7	Au	14	·34
													2	My	17○	·75												
3466	422	287	17M	·4292	21·1565	16·631	**365**	7	5	Ap	7	·59	7	My	7○	·12	1	Je	5●	·65	3	Jl	5	·18	4	Au	3	·71
3467	423	288	17M	·6880	10·2648	12·789	**366**	1	2	Mr	27	·95	4	Ap	26○	·48	6	My	26	·01	7	Je	24	·54	2	Jl	24	·07
3468	424	289	17M	·9467	28·9037	10·922	**367**	2	1	Ap	15	·85	3	My	15	·38	4	Je	13	·91	6	Jl	13	·44	7	Au	11	·97
3469	425	290	17M	·2055	18·0120	7·079	**368**	3	6	Ap	4●	·22	7	My	3	·75	2	Je	2	·28	3	Jl	1	·81	5	Jl	31	·34
3470	426	291	17M	·4642	7·1203	3·236	**369**	5	3	Mr	24	·58	5	Ap	23	·11	6	My	22	·65	1	Je	21	·18	4	Au	19○	·24
																					2	Jl	20	·71				
3471	427	292	17M	·7230	25·7592	1·370	**370**	6	2	Ap	12	·48	4	My	12	·01	5	Je	10	·54	7	Jl	10	·07	1	Au	8●○	·60
3472	428	293	17M	·9818	14·8675	25·082	**371**	7	6	Ap	1	·85	1	My	1	·38	2	My	30	·91	4	Je	29○	·44	5	Jl	28	·97
3473	429	294	17M	·2405	3·9758	21·239	**372**	1	4	Mr	21	·22	5	Ap	19	·75	7	My	19	·28	3	Jl	17●	·34	4	Au	15	·87
																	1	Je	17○	·81								
3474	430	295	17M	·4993	22·6147	19·372	**373**	3	3	Ap	9	·11	4	My	8	·64	6	Je	7●○	·17	7	Jl	6	·71	2	Au	5	·24
3475	431	296	17M	·7580	11·7230	15·529	**374**	4	7	Mr	29	·48	2	Ap	28	·01	3	My	27	·54	5	Je	26	·07	6	Jl	25	·60
3476	432	297	18M	·0168	0·8313	11·687	**375**	5	4	Mr	18	·85	7	My	16	·91	2	Je	15	·44	3	Jl	14	·97	5	Au	13	·50
									6	Ap	17○	·38																
3477	433	298	17M	·2755	19·4702	9·820	**376**	6	3	Ap	5○	·75	5	My	5	·28	6	Je	3	·81	1	Jl	3	·34	2	Au	1	·87
3478	434	299	17M	·5343	8·5785	5·977	**377**	1	1	Mr	26○	·11	2	Ap	24	·64	4	My	24	·17	5	Je	22	·70	7	Jl	22	·23
																									1	Au	20	·77
3479	435	300	17M	·7930	27·2174	4·110	**378**	2	7	Ap	14	·01	1	My	13	·54	3	Je	12	·07	4	Jl	11	·60	6	Au	10	·13
3480	436	301	18M	·0518	16·3259	0·268	**379**	3	4	Ap	3	·38	5	My	2	·91	7	Je	1	·44	1	Je	30	·97	3	Jl	30○	·50
3481	437	302	17M	·3106	5·4340	23·979	**380**	4	1	Mr	22	·74	3	Ap	21	·27	4	My	20	·81	7	Jl	18○	·87	2	Au	17	·40
																	6	Je	19	·34								
3482	438	303	17M	·5693	24·0729	22·113	**381**	6	7	Ap	10	·64	2	My	10	·17	3	Je	8	·70	5	Jl	8●	·23	6	Au	6	·76
3483	439	304	17M	·8281	13·1812	18·270	**382**	7	5	Mr	31	·01	6	Ap	29	·54	1	My	29○	·07	2	Je	27	·60	4	Jl	27	·13
3484	440	305	18M	·0868	2·2895	14·427	**383**	1	2	Mr	20	·38	3	Ap	18	·91	6	Je	16	·97	1	Jl	16	·50	3	Au	15	·03
													5	My	18○	·44												
3485	441	306	17M	·3456	20·9283	12·560	**384**	2	1	Ap	7	·27	2	My	6○	·80	4	Je	5	·33	5	Jl	4	·87	7	Au	3	·40
3486	442	307	17M	·6043	10·0366	8·718	**385**	4	5	Mr	27	·64	7	Ap	26●	·17	1	My	25	·70	3	Je	24	·23	4	Jl	23	·76
3487	443	308	17M	·8631	28·6755	6·851	**386**	5	4	Ap	15●	·54	6	My	15	·07	7	Je	13	·60	2	Jl	13	·13	3	Au	11	·66
3488	444	309	18M	·1219	17·7838	3·008	**387**	6	1	Ap	4	·91	3	My	4	·44	4	Je	2	·97	6	Jl	2	·50	1	Au	1	·03
3489	445	310	17M	·3806	6·8921	26·720	**388**	7	6	Mr	24	·27	7	Ap	22	·80	2	My	22	·33	3	Je	20	·86	6	Au	18●○	·93
																					5	Jl	20	·39				
3490	446	311	17M	·6394	25·5310	24·853	**389**	2	5	Ap	12	·17	6	My	11	·70	1	Je	10	·23	2	Jl	9	·76	4	Au	8	·29
3491	447	312	17M	·8981	14·6393	21·011	**390**	3	2	Ap	1	·54	4	My	1	·07	5	My	30	·60	7	Je	29○	·13	1	Jl	28	·66
3492	448	313	18M	·1569	3·7476	17·168	**391**	4	6	Mr	21	·90	1	Ap	20	·43	2	My	19	·97	6	Jl	18	·03	7	Au	16	·56
																	4	Je	18○	·50								
3493	449	314	17M	·4156	22·3865	15·301	**392**	5	5	Ap	8	·80	7	My	8	·33	1	Je	6●	·86	3	Jl	6	·39	4	Au	4	·92
3494	450	315	17M	·6744	11·4948	11·458	**393**	7	3	Mr	29	·17	4	Ap	27○	·70	6	My	27●	·23	7	Je	35	·76	2	Jl	25	·29

Surya Siddhanta.

	Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
	+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77529	+ 295·30588	+324·83647 +354·36705
	+ 9·880	+ 11·356	+ 13·832	+ 15·808	+ 17·784	+ 19·760	+ 21·736 + 23·712

Asvina				Kartika				Margasira				Pausha				A.D.	Magha			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction
5	Au	24	·45	6	S	22	·98	1	O	22	·51	3	N	21○	·04		4	D	.0	·57
4	S	11	·34	5	O	10	·87	7	N	9●	·40	1	D	8	·93	**57**	3	Jr	7	·47
1	Au	31	·71	3	S	30○	·24	4	O	29	·77	6	N	28	·30		7	D	27	·83
{6	Au	21	·08	2	O	19	·14	3	N	17	·67	5	D	17	·20	**59**	6	Jr	15	·73
{7	S	19○	·61																	
4	S	8●○	·97	6	O	8	·31	1	N	7	·04	2	D	6	·57	**60**	4	Jr	5	·10
2	Au	28●	·34	3	S	26	·87	5	O	26	·40	6	N	24	·93		1	D	24	·46
1	S	16	24	2	O	15	·77	4	N	14	·30	5	D	13	·83	**62**	7	Jr	12○	·36
5	S	5	·61	7	O	5	·14	1	N	3	·67	3	D	3	·20	**63**	4	Jr	1●○	·73
2	Au	25	·97	4	S	24	·50	6	O	24	·03	7	N	22	·57		2	D	22	·10
1	S	12	·87	3	O	12	·40	4	N	10○	·93	6	D	10	·46	**65**	7	Jr	8	·99
6	S	2	·24	7	O	1	·77	2	O	31○	·30	3	N	29	·83		5	D	29	·36
3	Au	22	·61	5	S	21	·14	6	O	20○	·67	1	N	19	·20		2	D	18	·73
2	S	10	·50	4	O	10●	·03	5	N	8	·56	7	D	8	·09	**68**	1	Jr	6	·63
6	Au	29○	·87	1	S	28	·40	2	O	27	·93	4	N	26	·46		5	D	25	·99
5	S	17	·77	7	O	17	·30	1	N	15	·83	3	D	15	·36	**70**	4	Jr	13	·89
3	S	7	·13	4	O	6	·67	6	N	5	·20	7	D	4	·73	**71**	2	Jr	3	·26
7	Au	27	·50	2	S	26	·03	3	O	25	·56	5	N	24	·09		6	D	23○	·62
6	S	14	·40	7	O	13	·93	2	N	12	·46	3	D	11○	·99	**73**	5	Jr	10	·52
3	S	3	·77	5	O	3	·30	6	N	1	·83	1	D	1○	·36		2	D	30	·89
1	Au	24	·13	2	S	22	·66	4	O	22	·19	5	N	20●	·73		7	D	20	·26
7	S	12	·03	1	O	11○	·56	3	N	10●	·09	4	D	9	·62	**76**	6	Jr	8	·15
4	Au	31	·40	5	S	29○	·93	7	O	29	·46	1	N	27	·99		3	D	27	·52
3	S	19○	·30	4	O	18	·83	6	N	17	36	7	D	16	·89	**78**	2	Jr	15	·42
7	S	8●	·66	2	O	8	·19	3	N	6	·72	5	D	6	·25	**79**	6	Jr	4	·79
5	Au	29●	·03	6	S	27	·56	1	O	27	·09	2	N	25	·62		4	D	25	·15
3	S	15	·93	5	O	15	·46	6	N	13	·99	1	D	13	·52	**81**	3	Jr	12●○	·05
1	S	5	·29	2	O	4	·83	4	N	3	·36	5	D	2	·89	**82**	7	Jr	1●	·42
5	Au	25	·66	7	S	24	·19	1	O	23	·72	3	N	22○	·25		4	D	21	·78
4	S	13	·56	6	O	13	·09	7	N	11●○	·62	2	D	11	·15	**84**	3	Jr	9	·68
1	S	1	·93	3	O	1	·46	4	O	30○	·99	6	N	29	·52		1	D	29	·05
6	Au	22	·29	7	S	20	·82	2	O	20	·35	3	N	18	·89		5	D	18	·42
5	S	10○	·19	6	O	9	·72	1	N	8	·25	2	D	7	·78	**87**	4	Jr	6	·31
2	Au	30○	·56	4	S	29	·09	5	O	28	·62	7	N	27	·15		1	D	26	·68
1	S	17	·46	2	O	16	·99	4	N	15	·52	6	D	15	·05	**89**	7	Jr	13	·58
5	S	6	·82	7	O	6	·35	1	N	4	·88	3	D	4	·41	**90**	4	Jr	2○	·95
3	Au	27	·19	4	S	25	·72	6	O	25	·25	7	N	23	·78		2	D	23○	·31
2	S	15	·09	3	O	14	·62	5	N	13	·15	6	D	12○	·68	**92**	1	Jr	11	·21
6	S	3	·45	7	O	2	·99	2	N	1	·52	4	D	1	·05		5	D	30	·58
3	Au	23	·82	5	S	22	·35	6	O	21○	·88	1	N	20●	·41		2	D	19	·94

A.D.	Phalguna				Chaitra			
	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
56	6	Jr	19	·10	7	F	17	·63
	5	F	6	·00	6	Mr	7	·53
58	2	Jr	26	·36	3	F	24	·89
	1	F	14	·26	2	Mr	15○	·79
	5	F	3	·63	7	Mr	4●	·16
61	2	Jr	22○	·99	4	F	21	·53
	1	F	10	·89	3	Mr	12	·42
	6	Jr	31	·26	7	Mr	1	·76
64	3	Jr	20	·63	5	F	19	·19
	2	F	7	·52	4	Mr	9	·08
66	6	Jr	27	·89	1	F	26	·42
67	{4	Jr	17	·26	7	Mr	17	·32
	{5	F	15	·79				
	3	F	5	·16	4	Mr	5○	·69
69	7	Jr	24	·52	2	F	23○	·05
	6	F	12	·42	7	Mr	13	·95
	3	F	1●	·79	5	Mr	3	·32
72	1	Jr	22	·15	2	F	20	·69
	7	F	9	·05	1	Mr	10	·58
74	4	Jr	29	·42	5	F	27	·95
75	1	Jr	18	·79	3	F	17	·32
	7	F	6	·68	2	Mr	7	·21
77	5	Jr	26	·05	6	F	24	·58
	3	F	13	·95	5	Mr	15	·48
	1	F	3○	·32	2	Mr	4	·85
80	5	Jr	23●○	·68	7	F	22	·21
	4	F	10	·58	6	Mr	12	·11
	1	Jr	30	·95	3	Mr	1	·48
83	6	Jr	20	·31	7	F	18	·85
	5	F	8	·21	6	Mr	8	·74
85	2	Jr	27	·58	4	F	26	·11
86	{6	Jr	16	·95	3	Mr	17○	·01
	{1	F	15	·48				
	5	F	4	·84	7	Mr	6●○	·37
88	3	Jr	25	·21	4	F	23	·74
	2	F	12	·11	3	Mr	13	·64
	6	F	1	·48	1	Mr	3	·01
91	3	Jr	21	·84	5	F	20	·37
	2	F	9	·74	4	Mr	10	·27
93	7	Jr	29	·11	1	F	27	·64
94	4	Jr	18	·47	6	F	17	·01

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisahka. Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
3495	451	316	17M	·9332	0·6031	7·616	**394**	1	7	Mr	18	54	3	My	16	··60	5	Je	15	·13	6	Jl	14	·66	1	Au	13	·19
									2	Ap	17●○	·67																
3496	452	317	18M	·1919	19·2420	5·749	**395**	2	6	Ap	6●○	·43	7	My	5	·96	2	Je	4	·49	4	Jl	4	·03	5	Au	2	·56
3497	453	318	17M	·4507	8·3503	1·906	**396**	3	3	Mr	25	·80	5	Ap	24	·33	6	My	23	·86	1	Je	22	·39	2	Jl	21	·92
																									4	Au	20	·45
3498	454	319	17M	·7094	26·9892	0·039	**397**	5	2	Ap	13	·70	4	My	13	·23	5	Je	11	·76	7	Jl	11	·29	1	Au	9○	·82
3499	455	320	17M	·9682	16·0975	23·751	**398**	6	7	Ap	3	·07	1	My	2	·60	3	Je	1	·13	4	Je	30	·66	6	Jl	30○	·19
3500	456	321	18M	·2269	5·2058	19·908	**399**	7	4	Mr	23	·43	5	Ap	21	·96	7	My	21	·49	3	Jl	19●	·55	5	Au	18	·09
																	2	Je	20	·02								
3501	457	322	17M	·4857	23·8447	18·042	**400**	1	3	Ap	10	·33	4	My	9	·86	6	Je	8○	·39	7	Jl	7●	·92	2	Au	6	·45
3502	458	323	17M	·7444	12·9530	14·199	**401**	3	7	Mr	30	·70	2	Ap	29	·23	3	My	28○	·76	5	Je	27	·29	6	Jl	26	·82
3503	459	324	18M	·0032	2·0613	10·356	**402**	4	5	Mr	20	·06	6	Ap	18	·59	2	Je	16	·66	4	Jl	16	·19	5	Au	14	·72
													1	My	18●○	·13												
3504	460	325	18M	·2620	20·7001	8·489	**403**	5	3	Ap	7	·96	5	My	7●	·49	7	Je	6	··02	2	Jl	5	·55	3	Au	4	·08
3505	461	326	17M	·5207	9·8084	4·647	**404**	6	1	Mr	27○	·33	2	Ap	25	·86	4	My	25	·39	6	Je	24	·92	7	Jl	23	·45
3506	462	327	17M	·7795	28·4473	2·780	**405**	1	7	Ap	15	·23	1	My	14	·76	2	Je	13	·29	4	Jl	12	·82	6	Au	11	·35
3507	463	328	18M	·0382	17·5556	26·492	**406**	2	4	Ap	4	·59	6	My	4	·12	7	Je	2	·65	2	Jl	2	·19	3	Jl	31	·72
3508	464	329	18M	·2970	6·6639	22·649	**407**	3	1	Mr	24	·96	3	Ap	23	·49	5	My	23	·02	6	Je	21	·55	2	Au	19●	·61
																					1	Jl	21	·08				
3509	465	330	17M	·5557	25·3028	20·782	**408**	4	7	Ap	11	·86	2	My	11	·39	3	Je	9	·92	5	Jl	9○	·45	6	Au	7	·98
3510	466	331	17M	·8145	14·4111	16·939	**409**	6	5	Ap	1	·23	6	Ap	30	·76	1	My	30	·29	2	Je	28●○	·82	4	Jl	28	·35
3511	467	332	18M	·0732	3·5194	13·097	**410**	7	2	Mr	21	·59	4	Ap	20	·12	5	My	19	·65	1	Jl	17	·71	3	Au	16	·25
																	7	Je	18●	·18								
3512	468	333	18M	·3320	22·1583	11·230	**411**	1	1	Ap	9	·49	3	My	9○	·02	4	Je	7	·55	6	Jl	7	·08	1	Au	5	·61
3513	469	334	17M	·5908	11·2666	7·387	**412**	2	5	Mr	28	·86	7	Ap	27○	·39	1	My	26	·92	3	Je	25	·45	4	Jl	24	·98
3514	470	335	17M	·8495	0·3749	3·544	**413**	4	3	Mr	18	·22	6	My	16	·28	7	Je	14	·82	2	Jl	14	·35	3	Au	12	·88
									4	Ap	16○	·75																
3515	471	336	18M	·1083	19·0138	1·678	**414**	5	2	Ap	6●	·12	3	My	5	·65	5	Je	4	·18	6	Jl	3	·71	1	Au	2	·24
3516	472	337	18M	·3670	8·1221	25·390	**415**	6	6	Mr	26	·49	1	Ap	25	·02	2	My	24	·55	4	Je	23	·08	5	Jl	22	·61
																									7	Au	21○	·14
3517	473	338	17M	·6258	26·7610	23·523	**416**	7	5	Ap	13	·39	6	My	12	·92	1	Je	11	·45	2	Jl	10	·98	4	Au	9○	·51
3518	474	339	17M	·8845	15·8693	19·680	**417**	2	2	Ap	2	·75	4	My	2	·28	5	My	31	·81	7	Je	30	·34	1	Jl	29	·88
3519	475	340	18M	·1433	4·9776	15·837	**418**	3	7	Mr	23	·12	1	Ap	21	·65	3	My	21	·18	6	Jl	19●	·24	7	Au	17	·77
																	4	Je	19	·71								
3520	476	341	18M	·4021	23·6164	13·971	**419**	4	6	Ap	11	·02	7	My	10	·55	2	Je	9○	·08	3	Jl	8	·61	5	Au	7	·14
3521	477	342	17M	·6608	12·7247	10·128	**420**	5	3	Mr	30	·38	4	Ap	28	·92	6	My	28○	·45	7	Je	26	·98	2	Jl	26	·51
3522	478	343	17M	·9196	1·8330	6·285	**421**	7	7	Mr	19	·75	2	Ap	18	·28	5	Je	16	·34	6	Jl	15	·87	1	Au	14	·40
													3	My	17	·81												
3523	479	344	18M	·1783	20·4719	4·418	**422**	1	6	Ap	7○	·65	1	My	7	·18	2	Je	5	·71	4	Jl	5	·24	5	Au	3	·77
3524	480	345	18M	·4371	9·5802	0·576	**423**	2	4	Mr	28○	·02	5	Ap	26	·55	7	My	26	·08	1	Je	24	·61	3	Jl	24	·14
3525	481	346	17M	·6958	28·2191	26·263	**424**	3	2	Ap	14	·91	4	My	14	·44	5	Je	12	·98	7	Jl	12	·51	2	Au	11	·04
3526	482	347	17M	·9546	17·3274	22·421	**425**	5	7	Ap	4	·28	1	My	3	·81	3	Je	2	·34	4	Jl	1	·87	6	Jl	31	·40
3527	483	348	18M	·2134	6·4357	18·578	**426**	6	4	Mr	24	·65	6	Ap	23	·18	7	My	22	·74	2	Je	21	·24	5	Au	19●	·30
																					3	Jl	20○	·77				
3528	484	349	18M	·4721	25·0746	16·711	**427**	7	3	Ap	12	·55	5	My	12	·08	6	Je	10	61	1	Jl	10●○	·14	2	Au	8	·67
3529	485	350	17M	·7309	14·1829	12·868	**428**	1	7	Mr	31	·91	2	Ap	30	·44	3	My	29	·97	5	Je	28○	·50	7	Jl	28	·04
3530	486	351	17M	·9896	3·2912	9·026	**429**	3	5	Mr	21	·28	6	Ap	19	·81	2	Je	17	·87	4	Jl	17	·40	5	Au	15	·93
													1	My	19○	·34												
3531	487	352	18M	·2484	21·9301	7·159	**430**	4	4	Ap	9	·18	5	My	8○	·71	7	Je	7	·24	1	Jl	6	·77	3	Au	5	·30
3532	488	353	18M	·5071	11·0384	3·316	**431**	5	1	Mr	29	·54	3	Ap	28○	·08	4	My	27	·61	6	Je	26	·14	7	Jl	25	·67
3533	489	354	17M	·7659	0·1467	27·028	**432**	6	5	Mr	17	·91	1	My	15	·97	3	Je	14	·50	5	Jl	14	·03	6	Au	12	·56
									7	Ap	16●	·44																

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{ +324·83647 { +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 { + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	11	·72	4	O	11○	·25	5	N	9	·78	7	D	9	·31	95	1	Jr	7	·84		3	F	6	·37	4	Mr	7	·90
7	S	1	·09	1	S	30○	·62	3	O	30	·15	4	N	28	·68		6	D	28	·21	96	7	Jr	26	·74	2	F	25	·27
5	S	18	·98	7	O	18	·51	2	N	17	·05	3	D	16	·58	97	5	Jr	15	·11		6	F	13○	·64	1	Mr	15	·17
3	S	8	·35	4	O	7	·88	6	N	6	·41	7	D	5	·94	98	2	Jr	4	·47		4	F	3○	·00	5	Mr	4	·53
7	Au	28	·72	2	S	27	·25	3	O	26	·78	5	N	25	·31		6	D	24	·84	99	1	Jr	23○	·37	2	F	21	·90
6	S	16	·62	1	O	16	·15	2	N	14	·68	4	D	14	·21	400	5	Jr	12	·74		7	F	11	·27	1	Mr	11	·80
3	S	4	·98	5	O	4	·51	7	N	3	·04	1	D	2○	·57	01	3	Jr	1	·11		4	Jr	30	·64	6	Mr	1	·17
1	Au	25	·35	2	S	23	·88	4	O	23	·41	5	N	21○	·94		7	D	21	·47	02	2	Jr	20	·00	3	F	18	·53
7	S	13	·25	1	O	12	·78	3	N	11●○	·31	4	D	10	·84	03	6	Jr	9	·37		7	F	7	·90	2	Mr	9	·43
4	S	2	·61	6	O	2	·15	7	O	31	·68	2	N	30	·21		3	D	29	·74	04	5	Jr	28	·27	6	F	26	·80
1	Au	21	·98	{ 3	S	20○	·51	Margasira Kshaya				6	N	18	·57		1	D	18	·10	05	{ 2	Jr	16	·63	5	Mr	16○	·70
				{ 5	O	20	·04															{ 4	F	15	·17				
7	S	9○	·88	2	O	9	·41	3	N	7	·94	5	D	7	·47	06	7	Jr	6	·00		1	F	4	·53	3	Mr	6○	·06
5	Au	30○	·25	6	S	28	·78	1	O	28	·31	2	N	26	·84		4	D	26	·37	07	5	Jr	24	·90	7	F	23●	·43
4	S	18	·14	5	O	17	·67	7	N	16	·21	1	D	15	·74	08	3	Jr	14○	·27		4	F	12●	·80	6	Mr	13	·33
1	S	6	·51	3	O	6	·04	4	N	4	·57	6	D	4	·10	09	7	Jr	2○	·63		2	F	1	·16	3	Mr	2	·69
5	Au	26	·88	7	S	25	·41	1	O	24	·94	3	N	23	·47		5	D	23○	·00	10	6	Jr	21	·53	1	F	20	·06
4	S	14	·78	6	O	14	·31	7	N	12	·84	2	D	12●	·37	11	3	Jr	10	·90		5	F	9	·43	6	Mr	10	·96
2	S	4	·14	3	O	3	·67	5	N	2○	·20	6	D	1	·73		1	D	31	·27	12	2	Jr	29	·80	4	F	28	·33
6	Au	23	·51	1	S	22	·04	2	O	21○	·57	4	N	20	·10		5	D	19	·63	13	7	Jr	18	·16	1	E	16	·69
5	S	11	·41	6	O	10●○	·94	1	N	9	·47	3	D	9	·00	14	4	Jr	7	·53		6	F	6	·06	7	Mr	7	·59
2	Au	31	·77	4	S	30●	·30	5	O	29	·84	7	N	28	·37		1	D	27	·90	15	3	Jr	26	·43	4	F	24○	·96
1	S	19●	·67	3	O	19	·20	4	N	17	·73	6	D	17	·26	16	7	Jr	15	·79		2	F	14○	·32	3	Mr	14	·86
6	S	8	·04	7	O	7	·57	2	N	6	·10	3	D	5	·63	17	5	Jr	4	·16		6	F	2○	·69	1	Mr	4	·22
3	Au	28	·41	4	S	26	·94	6	O	26	·47	1	N	25	·00		2	D	24	·53	18	4	Jr	23	·06	5	F	21	·59
2	S	16	·30	3	O	15	·83	5	N	14	·36	6	D	13○	·90	19	1	Jr	12	·43		2	F	10	·96	4	Mr	12	·49
6	S	5	·67	1	O	5	·20	2	N	3	·73	4	D	3●○	·26	20	5	Jr	1	·79		7	Jr	31	·32	1	F	29	·85
4	Au	25	·04	5	S	23	·57	7	O	23	·10	1	N	21○	·63		3	D	21	·16	21	4	Jr	19	·69	6	F	18	·22
2	S	12	·94	4	O	12	·47	6	N	11●	·00	7	D	10	·53	22	2	Jr	9	·06		3	F	7	·59	5	Mr	9	·12
7	S	2	·30	1	O	1○	·83	2	O	31	·36	4	N	29	·89		6	D	29	·42	23	7	Jr	27	·96	2	F	26	·49
{ 4	Au	22	·67	7	O	20	·73	2	N	19	·26	Pausha Kshaya					3	D	18	·79	24	5	Jr	17	·32	{ 6	F	15	·85
{ 6	S	21○	·20																							{ 1	Mr	16○	·38
3	S	9○	·57	5	O	9	·10	6	N	7	·63	1	D	7	·16	25	2	Jr	5	·69		4	F	4	·22	5	Mr	5●	·75
7	Au	29●	·93	2	S	28	·46	4	O	28	·00	5	N	26	·53		7	D	26	·06	26	1	Jr	24○	·59	3	F	23	·12
6	S	17	·83	1	O	17	·36	2	N	15	·89	4	D	15	·42	27	5	Jr	13○	·95		7	F	12	·48	2	Mr	14	·02
4	S	7	·20	5	O	6	·73	7	N	5	·26	1	D	4	·79	28	3	Jr	3○	·32		4	F	1	·85	6	Mr	2	·38
1	Au	26	·57	3	S	25	·10	4	O	24	·63	6	N	23	·16		7	D	22	·69	29	2	Jr	21	·22	3	F	19	·75
7	S	14	·46	1	O	13	·99	3	N	12○	·52	5	D	12●	·06	30	6	Jr	10	·59		1	F	9	·12	2	Mr	10	·65
4	S	3	·83	6	O	3	·36	7	N	1○	·89	2	D	1	·42		3	D	30	·95	31	5	Jr	29	·48	7	F	28	·01
2	Au	24	·20	3	S	22	·73	5	O	22○	·26	6	N	20	·79		1	D	20	·32	32	2	Jr	18	·85	4	F	17	·38
1	S	11	·10	2	O	10●	·63	4	N	9	·16	5	D	8	·69	33	7	Jr	7	·22		1	F	5	·75	3	Mr	7○	·28

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Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
3534	490	355	18M	·0246	18·7859	25·161	**433**	1	4	Ap	5	·81	6	My	5	·84	7	Je	3	·87	2	Jl	3	·40	3	Au	1	·93
3535	491	356	18M	·2834	7·8939	21·319	**434**	2	2	Mr	26	·18	3	Ap	24	·71	5	My	24	·24	6	Je	22	·77	1	Jl	22	·30
																									2	Au	20○	·83
3536	492	357	18M	·5422	26·5328	19·452	**435**	3	1	Ap	14	·07	2	My	13	·60	4	Je	12	·14	5	Jl	11	·67	7	Au	10●○	·20
3537	493	358	17M	·8009	15·6411	15·609	**436**	4	5	Ap	2	·44	6	My	1	·97	1	My	31	·50	3	Je	30	·03	4	Jl	29	·56
3538	494	359	18M	·0597	4·7494	11·766	**437**	6	2	Mr	22	·81	4	Ap	21	·34	5	My	20	·87	1	Jl	18	·93	3	Au	17	·42
																	7	Je	19○	·40								
3539	495	360	18M	·3184	23·3882	9·900	**438**	7	1	Ap	10	·71	3	My	10	·24	4	Je	8○	·77	6	Jl	8	·30	7	Au	6	·83
3540	496	361	18M	·5772	12·4965	6·057	**439**	1	6	Mr	31	·07	7	Ap	29	·60	2	My	29	·13	3	Je	27	·66	5	Jl	27	·20
3541	497	362	17M	·8359	1·6048	2·214	**440**	2	3	Mr	19	·44	4	Ap	17○	·97	1	Je	16	·03	2	Jl	15	·56	4	Au	14	·09
													6	My	17●	·50												
3542	498	363	18M	·0947	20·2437	0·347	**441**	4	2	Ap	7○	·34	3	My	6	·87	5	Je	5	·40	6	Jl	4	·93	1	Au	3	·46
3543	499	364	18M	·3535	9·3520	24·059	**442**	5	6	Mr	27○	·70	1	Ap	26	·24	2	My	25	·77	4	Je	24	·30	5	Jl	23	·83
																									7	Au	22	·36
3544	500	365	18M	·6122	27·9909	22·192	**443**	6	5	Ap	15	·60	7	My	15	·13	1	Je	13	·66	3	Jl	13	·19	4	Au	11	·72
3545	501	366	17M	·8710	17·0992	18·350	**444**	7	2	Ap	3	·97	4	My	3	·50	6	Je	2	·03	7	Jl	1	·56	2	Jl	31○	·09
3546	502	367	18M	·1297	6·2075	14·507	**445**	2	7	Mr	24	·34	1	Ap	22	·87	3	My	22	·40	4	Je	20	·93	7	Au	18	·99
																					6	Jl	20○	·46				
3547	503	368	18M	·3885	24·8464	12·640	**446**	3	6	Ap	12	·23	7	My	11	·76	2	Je	10	·30	3	Jl	9●○	·83	5	Au	8	·36
3548	504	369	18M	·6472	13·9547	8·797	**447**	4	3	Ap	1	·60	5	My	1	·13	6	My	30○	·66	1	Je	29●	·19	2	Jl	28	·72
3549	505	370	17M	·9060	3·0630	4·955	**448**	5	7	Mr	20	·97	2	Ap	19	·50	5	Je	17	·56	7	Jl	17	·09	1	Au	15	·62
													4	My	19○	·03												
3550	506	371	18M	·1648	21·7018	3·088	**449**	7	6	Ap	8	·87	1	My	8●○	·40	2	Je	6	·93	4	Jl	6	·46	5	Au	4	·99
3551	507	372	18M	·4235	10·8102	26·800	**450**	1	4	Mr	29	·23	5	Ap	27	·76	7	My	27	·29	1	Je	25	·82	3	Jl	25	·36
3552	508	373	18M	·6823	29·4491	24·933	**451**	2	1	Mr	18○	·60	4	My	16	·66	6	Je	15	·19	7	Jl	14	·72	2	Au	13	·25
									3	Ap	17	·13																
3553	509	374	17M	·9410	18·5574	21·090	**452**	3	7	Ap	5	·50	2	My	5	·03	3	Je	3	·56	5	Jl	3	·09	6	Au	1	·62
3554	510	375	18M	·1998	7·6657	17·248	**453**	5	4	Mr	25	·86	6	Ap	24	·40	7	My	23	·93	2	Je	22	·46	3	Jl	21	·99
																									5	Au	20○	·52
3555	511	376	18M	·4585	26·3046	14·381	**454**	6	3	Ap	13	·76	5	My	13	·29	6	Je	11	·82	1	Jl	11	·35	2	Au	9●	·88
3556	512	377	18M	·7173	15·4128	11·538	**455**	7	1	Ap	3	·13	2	My	2	·66	4	Je	1	·19	5	Je	30○	·72	7	Jl	30●	·25
3557	513	378	17M	·9760	4·5211	7·695	**456**	1	5	Mr	22	·50	7	Ap	21	·03	1	My	20	·56	4	Jl	18	·62	6	Au	17	·15
																	3	Je	19○	·09								
3558	514	379	18M	·2348	23·1600	5·829	**457**	3	4	Ap	10	·39	5	My	9	·92	7	Je	8●	·46	1	Jl	7	·99	3	Au	6	·52
3559	515	380	18M	·4936	12·2683	1·986	**458**	4	1	Mr	30	·76	3	Ap	29○	·29	4	My	28●	·82	6	Je	27	·35	7	Jl	26	·88
3560	516	381	18M	·7523	1·3766	25·698	**459**	5	6	Mr	20	·13	7	Ap	18○	·66	3	Je	16	·72	5	Jl	16	·25	6	Au	14	·78
													2	My	18●	·19												
3561	517	382	18M	·0111	20·0155	23·831	**460**	6	5	Ap	7●○	·03	6	My	6	·56	1	Je	5	·09	2	Jl	4	·62	4	Au	3	·15
3562	518	383	18M	·2698	9·1238	19·988	**461**	1	2	Mr	27●	·39	3	Ap	25	·92	5	My	25	·45	6	Je	23	·98	1	Jl	23	·52
																									3	Au	22	·05
3563	519	384	18M	·5286	27·7627	18·121	**462**	2	1	Ap	15	·29	2	My	14	·82	4	Je	13	·35	5	Jl	12	·88	7	Au	11○	·41
3564	520	385	18M	·7873	16·8710	14·279	**463**	3	5	Ap	4	·66	7	My	4	·19	1	Je	2	·72	3	Jl	2	·25	4	Jl	31○	·78
3565	521	386	18M	·0461	5·9793	10·436	**464**	4	3	Mr	24	·02	4	Ap	22	·56	6	My	22	·09	7	Je	20	·62	3	Au	18	·68
																					2	Jl	20●○	·15				
3566	522	387	18M	·3049	24·6182	8·569	**465**	6	1	Ap	11	·92	3	My	11	·45	4	Je	9○	·98	6	Jl	9●	·51	1	Au	8	·04
3567	523	388	18M	·5636	13·7242	4·726	**466**	7	6	Ap	1	·29	7	Ap	30	·82	2	My	30○	·35	3	Je	28	·88	5	Jl	28	·41
3568	524	389	18M	·8224	2·8347	0·884	**467**	1	3	Mr	21	·66	5	Ap	20	·19	1	Je	18	·25	2	Jl	17	·78	4	Au	16	·31
													6	My	19●○	·72												
3569	525	390	18M	·0811	21·4737	26·571	**468**	2	2	Ap	8	·55	4	My	8●	·08	5	Je	6	·62	7	Jl	6	·15	1	Au	4	·68
3570	526	391	18M	·3399	10·5826	22·729	**469**	4	6	Mr	28○	·92	1	Ap	27	·45	2	My	26	·98	4	Je	25	·51	6	Jl	25	·04
3571	527	392	18M	·5986	29·2209	20·862	**470**	5	4	Mr	18○	·29	7	My	16	·35	1	Je	14	·88	3	Jl	14	·41	4	Au	12	·94
									5	Ap	16	·82																
3572	528	393	18M	·8574	18·3292	17·019	**471**	6	3	Ap	6	·19	4	My	5	·72	6	Je	4	·25	7	Jl	3	·78	2	Au	2	·31

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+147·65293				+177·18353				+206·71411				+236·24470					+265·77529					+295·30588				+324·83647 +354·36705			
+9·880				+11·856				+13·832				+15·808					+17·784					+19·760				+21·736 +23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	Au	31○	·46	6	S	29●	·99	1	O	29	·52	3	N	28	·05		4	D	27	·58	**34**	6	Jr	26	·12	7	F	24●○	·65
4	S	19	·36	5	O	18	·89	7	N	17	·42	1	D	16	·95	**35**	3	Jr	15	·48		5	F	14●○	·01	6	Mr	15	·54
1	S	8	·73	3	O	8	·26	4	N	6	·79	6	D	6	·32	**36**	7	Jr	4	·85		2	F	3●	·38	3	Mr	3	·91
6	Au	28	·09	7	S	26	·62	2	O	26	·16	3	N	24	·69		5	D	24○	·22	**37**	6	Jr	22	·75	1	F	21	·28
4	S	15	·99	6	O	15	·52	1	N	14	·05	2	D	13○	·58	**38**	4	Jr	12	·11		5	F	10	·64	7	Mr	12	·18
2	S	5	·36	3	O	4	·89	5	N	3	·42	6	D	2●○	·95	**39**	1	Jr	1	·48		3	Jr	31	·01	4	Mr	1	·54
6	Au	25	·73	1	S	24	·26	2	O	23	·79	4	N	22	·32		5	D	21	·85	**40**	7	Jr	20	·38	1	F	18	·91
5	S	12	·62	7	O	12○	·15	1	N	10	·68	3	D	10	·22	**41**	4	Jr	8	·75		6	F	7	·28	7	Mr	8	·81
2	S	1	·99	4	O	1○	·52	6	O	31	·05	7	N	29	·58		2	D	29	·11	**42**	3	Jr	27	·64	5	F	26	·17
1	S	20●○	·89	3	O	20	·42	4	N	18	·95	6	D	18	·48	**43**	1	Jr	17	·01		2	F	15	·54	4	Mr	17	·07
6	S	10	·26	7	O	9	·79	2	N	8	·32	3	D	7	·85	**44**	5	Jr	6	·38		6	F	4○	·91	1	Mr	5	·44
3	Au	29	·62	5	S	28	·15	6	O	27	·68	1	N	26	·21		2	D	25	·74	**45**	4	Jr	24○	·28	5	F	22	·81
2	S	17	·52	4	O	17	·05	5	N	15	·58	7	D	15	·11	**46**	1	Jr	13●○	·64		3	F	12	·17	4	Mr	13	·70
6	S	6	·89	1	O	6	·42	2	N	4	·95	4	D	4	·48	**47**	6	Jr	3	·01		7	F	1	·54	2	Mr	3	·07
4	Au	27	·25	5	S	25	·78	7	O	25	·32	1	N	23○	·85		3	D	23	·38	**48**	4	Jr	21	·91	6	F	20	·44
3	S	14	·15	4	O	13	·68	6	N	12○	·21	7	D	11	·74	**49**	2	Jr	10	·27		3	F	8	·80	5	Mr	10	·34
7	S	3	·52	2	O	3	·05	3	N	1○	·58	5	D	1	·11		6	D	30	·64	**50**	1	Jr	29	·17	2	F	27	·70
4	Au	23	·89	6	S	22	·42	7	O	21	·95	2	N	20	·48		4	D	20	·01	**51**	5	Jr	18	·54	7	F	17	·07
3	S	11○	·78	5	O	11	·31	6	N	9	·84	1	D	9	·38	**52**	2	Jr	7	·91		4	F	6	·44	5	Mr	6○	·97
1	Au	31○	·15	2	S	29	·68	4	O	29	·21	5	N	27	·74		7	D	27	·27	**53**	1	Jr	25	·80	3	F	24○	·33
7	S	19	·05	1	O	18	·58	3	N	17	·11	4	D	16	·64	**54**	6	Jr	15	·17		7	F	13	·70	2	Mr	15	·23
4	S	8	·42	5	O	7	·95	7	N	6	·48	2	D	6	·01	**55**	3	Jr	4○	·54		5	F	3	·07	6	Mr	4	·60
1	Au	28	·78	3	S	27	·31	4	O	26	·84	6	N	25	·37		7	D	24○	·90	**56**	2	Jr	23	·44	3	F	21	·97
7	S	15	·68	2	O	15	·21	3	N	13	·74	5	D	13○	·27	**57**	6	Jr	11	·80		1	F	10	·33	2	Mr	11	·86
5	S	5	·05	6	O	4	·58	1	N	3	·11	2	D	2●	·64	**58**	4	Jr	1	·17		5	Jr	30	·70	7	Mr	1	·23
2	Au	25	·41	3	S	23	·94	5	O	23○	·48	7	N	22	·01		1	D	21	·54	**59**	3	Jr	20	·07	4	F	18	·60
1	S	13	·31	2	O	12●○	·84	4	N	11	·37	5	D	10	·90	**60**	7	Jr	9	·43		1	F	7	·96	3	Mr	8	·50
5	S	1	·68	7	O	1○	·21	1	O	30	·74	3	N	29	·27		4	D	28	·80	**61**	6	Jr	27	·33	7	F	25	·86
4	S	20●	·58	6	O	20	·11	7	N	18	·64	2	D	18	·17	**62**	3	Jr	16	·70		5	F	15○	·23	6	Mr	16●	·76
1	S	9	·94	3	O	9	·47	5	N	8	·00	6	D	7	·54	**63**	1	Jr	6	·07		2	F	4○	·60	4	Mr	6	·13
6	Au	30	·31	7	S	28	·84	2	O	28	·37	3	N	26	·90		5	D	26	·43	**64**	6	Jr	24○	·96	1	F	23	·49
5	S	17	·21	6	O	16	·74	1	N	15	·27	2	D	14	·80	**65**	4	Jr	13●	·33		5	F	11	·86	7	Mr	13	·39
2	S	6	·58	4	O	6	·11	5	N	4	·64	7	D	4○	·17	**66**	1	Jr	2	·70		3	F	1	·23	4	Mr	2	·76
6	Au	26	·94	1	S	25	·47	3	O	25	·00	4	N	23○	·53		6	D	23	·06	**67**	7	Jr	21	·60	2	F	20	·13
5	S	14	·84	7	O	14	·37	1	N	12●○	·90	3	D	12	·43	**68**	4	Jr	10	·96		6	F	9	·49	1	Mr	10	·02
3	S	3	·21	4	O	2	·74	6	N	1●	·27	7	N	30	·80		2	D	30	·33	**69**	3	Jr	28	·86	5	F	27	·31
7	Au	23	·57	2	S	22○	·10	3	O	21●	·64	5	N	20	·17		6	D	19	·70	**70**	1	Jr	18	·23	2	F	16	·76
6	S	11○	·47	1	O	11	·00	2	N	9	·53	4	D	9	·06	**71**	5	Jr	7	·59		7	F	6	·12	1	Mr	7○	·66
3	Au	31○	·84	5	S	30	·37	6	O	29	·90	1	N	28	·43		2	D	27	·96	**72**	4	Jr	26	·49	6	F	25	·02

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha (☉'s Anom col. 6) Week-day	Month	Day	Fraction	Jyeshta (+ 29·53059; + 1·976) Week-day	Month	Day	Fraction	Ashada (+ 59·06117; + 3·952) Week-day	Month	Day	Fraction	Sravana (+ 88·59176; + 5·928) Week-day	Month	Day	Fraction	Bhadrapada (+ 118·12235; + 7·904) Week-day	Month	Day	Fraction
3573	529	394	18M	·1162	7·4375	13·176	**472**	7	7	Mr	25	·55	2	Ap	24	·08	3	My	23	·61	5	Je	22	·14	6	Jl	21	·68
																									1	Au	20●	·21
3574	530	395	18M	·3749	26·0763	11·310	**473**	2	6	Ap	13	·45	7	My	12	·98	2	Je	11	·51	4	Jl	11○	·04	5	Au	9	·57
3575	531	396	18M	·6337	15·1846	7·467	**474**	3	3	Ap	2	·82	5	My	2	·35	6	My	31	·88	1	Je	30○	·41	2	Jl	29	·94
3576	532	397	18M	·8924	4·2929	3·624	**475**	4	1	Mr	23	·18	2	Ap	21	·72	4	My	21	·25	7	Jl	19	·31	1	Au	17	·84
																	5	Je	19●○	·78								
3577	533	398	18M	·1512	22·9318	1·757	**476**	5	7	Ap	10	·08	1	My	9○	·61	3	Je	8	·14	4	Jl	7	·67	6	Au	6	·20
3578	534	399	18M	·4099	12·0401	25·469	**477**	7	4	Mr	30	·45	5	Ap	28○	·98	7	My	28	·51	2	Je	27	·04	3	Jl	26	·57
3579	535	400	18M	·6687	1·1484	21·627	**478**	1	1	Mr	19	·82	3	Ap	18○	·35	6	Je	16	·41	7	Jl	15	·94	2	Au	14	·47
													4	My	17	·88												
3580	536	401	18M	·9274	19·7873	19·760	**479**	2	7	Ap	7●	·71	2	My	7	·24	3	Je	5	·78	5	Jl	5	·31	6	Au	3	·84
3581	537	402	18M	·1862	8·8956	15·917	**480**	3	5	Mr	27	·08	6	Ap	25	·61	1	My	25	·14	2	Je	23	·67	4	Jl	23	·20
3582	538	403	18M	·4450	27·5345	14·050	**481**	5	3	Ap	14	·98	5	My	14	·51	7	Je	13	·04	1	Jl	12	·57	3	Au	11●○	·10
3583	539	404	18M	·7037	16·6428	10·208	**482**	6	1	Ap	4	·35	2	My	3	·88	4	Je	2	·41	5	Jl	1	·94	7	Jl	31○	·47
3584	540	405	18M	·9625	5·7511	6·365	**483**	7	5	Mr	24	·71	7	Ap	23	·24	1	My	22	·77	3	Je	21○	·30	6	Au	19	·37
																					4	Jl	20	·84				
3585	541	406	18M	·2212	24·3900	4·498	**484**	1	4	Ap	11	·61	5	My	11	·14	7	Je	9○	·67	2	Jl	9	·20	3	Au	7	·73
3586	542	407	18M	·4800	13·4983	0·655	**485**	3	1	Mr	31	·98	3	Ap	30	·51	5	My	30○	·04	6	Je	28	·57	1	Jl	28	·10
3587	543	408	18M	·7387	2·6061	24·367	**486**	4	6	Mr	21	·34	7	Ap	19	·88	3	Je	17	·94	5	Jl	17	·47	7	Au	16	·00
													2	My	19●	·41												
3588	544	409	18M	·9975	21·2455	22·500	**487**	5	5	Ap	9○	·24	6	My	8●	·77	1	Je	7	·30	2	Jl	6	·83	4	Au	5	·36
3589	545	410	18M	·2563	10·3538	18·658	**488**	6	2	Mr	28●○	·61	4	Ap	27	·14	5	My	26	·67	7	Je	25	·20	1	Jl	24	·73
3590	546	411	18M	·5150	28·9927	16·791	**489**	1	1	Ap	16	·51	3	My	16	·04	4	Je	14	·57	6	Jl	14	·10	7	Au	12	·63
3591	547	412	18M	·7738	18·1010	12·948	**490**	2	5	Ap	5	·87	7	My	5	·40	1	Je	3	·94	3	Jl	3	·47	5	Au	2	·00
3592	548	413	19M	·0325	7·2092	9·105	**491**	3	3	Mr	26	·24	4	Ap	24	·77	6	My	24	·30	7	Je	22	·83	2	Jl	22○	·36
																									3	Au	20●	·89
3593	549	414	18M	·2913	25·8481	7·239	**492**	4	2	Ap	13	·14	3	My	12	·67	5	Je	11	·20	6	Jl	10○	·73	1	Au	9	·26
3594	550	415	18M	·5500	14·9564	3·396	**493**	6	6	Ap	2	·51	1	My	2	·04	2	My	31	·57	4	Je	30○	·10	5	Jl	29	·63
3595	551	416	18M	·8088	4·0647	27·108	**494**	7	3	Mr	22	·87	5	Ap	21	·40	6	My	20○	·93	3	Jl	19	·00	4	Au	17	·53
																	1	Je	19●	·46								
3596	552	417	19M	·0675	22·7036	25·241	**495**	1	2	Ap	10	·77	4	My	10○	·30	5	Je	8	·83	7	Jl	8	·36	1	Au	6	·89
3597	553	418	18M	·3263	11·8119	21·398	**496**	2	7	Mr	30	·14	1	Ap	28○	·67	3	My	28	·20	4	Je	26	·73	6	Jl	26	·26
3598	554	419	18M	·5851	0·9202	17·556	**497**	4	4	Mr	19	·50	6	Ap	18	·04	2	Je	16	·10	3	Jl	15	·63	5	Au	14	·11
													7	My	17	·57												
3599	555	420	18M	·8438	19·5591	15·689	**498**	5	3	Ap	7	·40	4	My	6	·93	6	Je	5	·46	7	Jl	4	·99	2	Au	3	·52
3600	556	421	19M	·1026	8·6674	11·846	**499**	6	7	Mr	27	·77	2	Ap	26	·30	3	My	25	·83	5	Je	24	·36	6	Jl	23	·89

ARYA SIDDHANTA FROM 500 A.D. TO 999 A.D.

Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
3601	557	422	18M	·3611	27·28318	9·612	**500**	7	6	Ap	14	·65	1	My	14	·18	2	Je	12	·71	4	Jl	12	·24	5	Au	10○	·77
3602	558	423	18M	·6198	16·39162	5·770	**501**	2	4	Ap	4	·02	5	My	3	·54	7	Je	2	·08	1	Jl	1	·61	3	Jl	31●	·40
3603	559	424	18M	·8785	5·50004	1·928	**502**	3	1	Mr	24	·38	2	Ap	22	·91	4	My	22	·44	7	Jl	20●	·50	2	Au	19	·03
																	5	Je	20○	·97								
3604	560	425	19M	·1371	24·13907	0·062	**503**	4	7	Ap	12	·28	1	My	11	·81	3	Je	10●○	·34	4	Jl	9	·87	6	Au	8	·40
3605	561	426	18M	·3958	13·24751	23·774	**504**	5	4	Mr	31	·65	6	Ap	30	·18	7	My	29	·71	2	Je	28	·24	3	Jl	27	·77
3606	562	427	18M	·6545	2·35594	19·932	**505**	7	2	Mr	21	·01	3	Ap	19○	·54	5	Je	17	·61	1	Jl	17	·14	2	Au	15	·67
													5	My	19●	·07												
3607	563	428	18M	·9132	20·99497	18·066	**506**	1	7	Ap	8○	·91	2	My	8	·44	3	Je	6	·97	5	Jl	6	·50	7	Au	5	·03
3608	564	429	19M	·1719	10·10341	14·224	**507**	2	5	Mr	29○	·28	6	Ap	27	·81	1	My	27	·34	2	Je	25	·87	4	Jl	25	·40
3609	565	430	18M	·4305	28·74242	12·357	**508**	3	4	Ap	16	·18	5	My	15	·71	7	Je	14	·24	1	Jl	13	·77	3	Au	12	·30
3610	566	431	18M	·6892	17·85086	8·515	**509**	5	1	Ap	5	·64	3	My	5	·07	4	Je	3	·60	6	Jl	3	·13	7	Au	10	·66
3611	567	432	18M	·9479	6·95930	4·673	**510**	6	5	Mr	25	·91	7	Ap	24	·44	1	My	23	·97	3	Je	22	·50	6	Au	20	·56
																					5	Jl	22○	·03				

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Surya Siddhanta.

Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77529	+ 295·30588	{ +324·83647 { +354·36705
+ 9·880	+ 11·856	+ 13·832	+ 15·806	+ 17·784	+ 19·760	{ + 21·736 { + 23·712

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	18	·74	4	O	18	·27	5	N	16	·80	7	D	16	·33	**73**	1	Jr	14○	·86		3	F	13	·39	4	Mr	14	·92
7	S	8	·10	1	O	7	·63	3	N	6	·16	4	D	5	·70	**74**	6	Jr	4●○	·23		7	F	2	·76	2	Mr	4	·29
4	Au	28	·47	6	S	27	·00	7	O	26	·53	2	N	25	·06		3	D	24○	·59	**75**	5	Jr	23	·12	6	F	21	·65
3	S	16	·37	4	O	15	·90	6	N	14	·43	7	D	13●	·96	**76**	2	Jr	12	·49		4	F	11	·02	5	Mr	11	·55
7	S	4	·74	2	O	4	·27	3	N	20○	·80	5	D	2	·33		6	D	31	·86	**77**	1	Jr	30	·39	2	F	28	·92
5	Au	25	·10	6	S	23	·63	1	O	23○	·16	2	N	21	·69		4	D	21	·22	**78**	5	Jr	19	·76	7	F	18	·29
4	S	13	·00	5	O	12○	·53	7	N	11	·06	1	D	10	·59	**79**	3	Jr	9	·12		4	F	7	·65	6	Mr	9	·18
1	S	2	·37	2	O	1●	·90	4	O	31	·43	5	N	29	·96		7	D	29	·49	**80**	2	Jr	28	·02	3	F	26○	·55
{ 5	Au	21○	·73	1	O	19	·80	3	N	18	·33	4	D	17	·86	**81**	6	Jr	16	·39		7	F	14○	·92	2	Mr	16	·45
{ 7	S	20●	·26																										
4	S	9	·63	6	O	9	·16	7	N	7	·69	2	D	7	·22	**82**	3	Jr	5	·75		5	F	4○	·28	6	Mr	5	·82
2	Au	30	·00	3	S	28	·53	5	O	28	·06	6	N	26	·59		1	D	26	·12	**83**	2	Jr	24	·65	4	F	23	·18
7	S	17	·90	2	O	17	·43	3	N	15	·96	5	D	15○	·49	**84**	7	Jr	14●	·02		1	F	12	·55	3	Mr	13	·08
5	S	6	·26	6	O	5	·79	1	N	4	·32	2	D	3○	·86	**85**	4	Jr	2	·39		5	Jr	31	·92	7	Mr	2	·45
2	Au	26	·63	4	S	25	·16	5	O	24	·69	7	N	23●○	·22		1	D	22	·75	**86**	3	Jr	21	·28	4	F	19	·81
1	S	14	·53	3	O	14	·06	4	N	12●	·59	6	D	12	·12	**87**	7	Jr	10	·65		2	F	9	·18	3	Mr	10	·71
5	S	3	·90	7	O	3○	·43	1	N	1●	·96	3	D	1	·49		5	D	31	·02	**88**	6	Jr	29	·55	1	F	28	·08
3	Au	23	·26	{ 4	S	21○	·79	7	N	19	·85			**Pausha**			2	D	19	·38	**89**	3	Jr	17	·92	{ 5	F	16	·45
				{ 6	O	21	·32							**Kshaya**												{ 6	Mr	17●○	·98
2	S	11●○	·16	3	O	10	·69	5	N	9	·22	6	D	8	·75	**90**	1	Jr	7	·28		2	F	5	·81	4	Mr	7●	·34
6	Au	31	·53	1	S	30	·06	2	O	29	·59	4	N	28	·12		5	D	27	·65	**91**	7	Jr	26○	·18	1	F	24●	·71
5	S	19	·42	6	O	18	·96	1	N	17	·49	3	D	17	02	**92**	4	Jr	15○	·55		6	F	14	·08	7	Mr	14	·61
2	S	7	·79	4	O	7	·32	5	N	5	·85	7	D	5	·38	**93**	1	Jr	3●○	·91		3	F	2	·44	4	Mr	3	·98
7	Au	28	·16	1	S	26	·69	3	O	26	·22	4	N	24	·75		6	D	24	·28	**94**	1	Jr	22	·81	2	F	21	·34
6	S	16	·06	7	O	15	·59	2	N	14○	·12	3	D	13	·65	**95**	5	Jr	12	·18		6	F	10	·71	1	Mr	12	·24
3	S	5	·42	4	O	4	·95	6	N	3○	·48	1	D	3	·02	**96**	2	Jr	1	·55		4	Jr	31	·08	5	F	29	·61
7	Au	24	·79	2	S	23	·32	3	O	22●○	·85	5	N	21	·38		6	D	20	·91	**97**	1	Jr	19	·44	2	F	17	·97
6	S	12	·69	1	O	12	·22	2	N	10	·75	4	D	10	·28	**98**	5	Jr	8	·81		7	F	7	·34	1	Mr	8○	·87
4	S	2○	·06	5	O	1	·59	7	O	31	·12	1	N	29	·65		3	D	29	·18	**99**	4	Jr	27	·71	6	F	26○	·24
{ 1	Au	22○	·42	4	O	20	·48	6	N	19	·01	7	D	18	·54	**500**	2	Jr	17	·06		3	F	15●○	·59	5	Mr	16	·12
{ 2	S	20	·95																										
7	S	9	·30	1	O	8	·83	3	N	7	·36	4	D	6	·89	**01**	6	Jr	5	·42		7	F	3	·95	2	Mr	5	·48
4	Au	29	·67	6	S	28	·20	7	O	27	·73	2	N	26	·26		3	D	25○	·79	**02**	5	Jr	24	·32	6	F	22	·85
3	S	17	·56	5	O	17	·10	6	N	15	·63	1	D	15○	·16	**03**	2	Jr	13	·69		4	F	12	·22	5	Mr	13	·75
7	S	6	·93	2	O	6	·46	3	N	4	·99	5	D	4○	·52	**04**	7	Jr	3	·05		1	F	1	·58	3	Mr	2	·12
5	Au	26	·30	6	S	24	·83	1	O	24	·36	2	N	22	·89		4	D	22	·42	**05**	5	Jr	20	·95	7	F	19	48
4	S	14	·20	5	O	13○	·73	7	N	12	·26	1	D	11	·79	**06**	3	Jr	10	·32		4	F	8	·79	6	Mr	10	·38
1	S	3	·56	3	O	3○	·09	4	N	1●	·62	6	D	1	·16		7	D	30	·69	**07**	2	Jr	29	·22	3	F	27	·75
5	Au	23	·93	{ 7	S	22○	·46	3	N	20	·52	5	D	20	·05			**Magha**			**08**	{ 6	Jr	18	·58	2	Mr	17	·62
				{ 2	O	21	·99											**Kshaya.**				{ 1	F	17	·10				
4	S	10●	·83	6	O	10	·36	7	N	8	·99	2	D	8	·42	**09**	3	Jr	6	·95		5	F	5○	·48	7	Mr	7	·01
2	Au	31●	·20	3	S	29	·73	5	O	29	·26	6	N	27	·79		1	D	27	·32	**10**	2	Jr	25○	·85	4	F	24	·38
1	S	19	·09	2	O	18	·62	4	N	17	·15	5	D	16	·68	**11**	7	Jr	15○	·22		1	F	13	·75	3	Mr	15	·28

TABLE X—

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year. Month and day A.D.	Fraction of day	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha (☉'s Anom col. 6; ☾'s Anom col. 7) Week-day	Month	Day	Fraction	Jyeshta (+ 29·53059; + 1·976) Week-day	Month	Day	Fraction	Ashada (+ 59·06117; + 3·952) Week-day	Month	Day	Fraction	Sravana (+ 88·59176; + 5·928) Week-day	Month	Day	Fraction	Bhadrapada (+ 118·12235; + 7·904) Week-day	Month	Day	Fraction
3612	568	433	19M	·2066	25·59832	2·806	**511**	7	4	Ap	13	·81	6	My	13	·34	7	Je	11	·87	2	Jl	11○	·40	3	Au	9	·93
3613	569	434	18M	·4653	14·70676	26·518	**512**	1	2	Ap	2	·17	3	My	1	·70	5	My	31○	·24	6	Je	29●	·77	1	Jl	29	·30
3614	570	435	18M	·7240	3·81519	22·677	**513**	3	6	Mr	22	·54	1	Ap	21	·07	2	My	20○	·60	5	Jl	18	·66	6	Au	17	·19
																	4	Je	19●	·14								
3615	571	436	18M	·9826	22·45421	20·810	**514**	4	5	Ap	10	·44	6	My	9●○	·97	1	Je	8	·50	3	Jl	8	·03	4	Au	6	·56
3616	572	437	19M	·2413	11·56265	16·968	**515**	5	2	Mr	30	·81	4	Ap	29	·34	5	My	28	·87	7	Je	27	·40	1	Jl	26	·93
3617	573	438	18M	·5000	0·67109	13·126	**516**	6	7	Mr	19○	·17	3	My	17	·23	4	Je	15	·76	6	Jl	15	·30	7	Au	13	·83
									1	Ap	17●	·70																
3618	574	439	18M	·7587	19·31011	11·260	**517**	1	6	Ap	7●	·07	7	My	6	·60	2	Je	5	·13	3	Jl	4	·66	5	Au	3	·19
3619	575	440	19M	·0174	8·41855	7·417	**518**	2	3	Mr	27	·44	4	Ap	25	·97	6	My	25	·50	1	Je	24	·03	2	Jl	23	·56
																									4	Au	22●○	·09
3620	576	441	19M	·2760	27·05757	5·551	**519**	3	2	Ap	15	·34	3	My	14	·87	5	Je	13	·40	6	Jl	12	·93	1	Au	11●	·46
3621	577	442	18M	·5347	16·16600	1·709	**520**	4	6	Ap	3	·70	1	My	3	·23	2	Je	1	·76	4	Jl	1○	·29	5	Jl	30	·82
3622	578	443	18M	·7934	5·27444	25·421	**521**	6	4	Mr	24	·07	5	Ap	22	·60	7	My	22	·13	3	Jl	20	·19	4	Au	18	·72
																	1	Je	20●○	·66								
3623	579	444	19M	·0521	23·91347	23·555	**522**	7	2	Ap	11	·97	4	My	11	·50	6	Je	10●	·03	7	Jl	9	·56	2	Au	8	·09
3624	580	445	19M	·3108	13·02189	19·713	**523**	1	7	Ap	1	·33	1	Ap	30○	·86	3	My	30	·40	4	Je	28	·93	6	Jl	28	·46
3625	581	446	18M	·5694	2·13033	15·870	**524**	2	4	Mr	20	·70	6	Ap	19○	·23	2	Je	17	·29	4	Jl	16	·82	5	Au	15	·35
													7	My	18	·76												
3626	582	447	18M	·8281	20·76936	14·004	**525**	4	3	Ap	8○	·60	5	My	8	·13	6	Je	6	·66	1	Jl	6	·19	2	Au	4	·72
3627	583	448	19M	·0868	9·87779	10·162	**526**	5	7	Mr	28	·97	2	Ap	27	·50	4	My	27	·03	5	Je	25	·56	7	Jl	25	·09
3328	584	449	19M	·3455	28·51682	8·295	**527**	6	6	Ap	16	·86	1	My	16	·39	2	Je	14	·92	4	Jl	14	·46	5	Au	12○	·99
3629	585	450	18M	·6042	17·62526	4·453	**528**	7	4	Ap	5	·23	5	My	4	·76	7	Je	3	·29	1	Jl	2	·82	3	Au	1○	·35
3630	586	451	18M	·8628	6·73368	0·611	**529**	2	1	Mr	25	·60	3	Ap	24	·13	4	My	23	·66	6	Je	22	·19	2	Au	20	·25
																					7	Jl	21●○	·72				
3631	587	452	19M	·1215	25·37271	26·299	**530**	3	7	Ap	13	·50	2	My	13	·03	3	Je	11	·56	5	Jl	11	·09	6	Au	9	·62
3632	588	453	19M	·3802	14·48115	22·457	**531**	4	4	Ap	2	·86	6	My	2	·39	7	My	31○	·92	2	Je	30●	·45	3	Jl	29	·98
3633	589	454	18M	·6389	3·58958	18·614	**532**	5	2	Mr	22	·23	3	Ap	20	·76	5	My	20○	·29	1	Jl	18	·35	2	Au	16	·88
																	6	Je	18	·82								
3634	590	455	18M	·8976	22·22861	16·749	**533**	7	1	Ap	10	·13	2	My	9●	·66	4	Je	8	·19	5	Jl	7	·72	7	Au	6	·25
3635	591	456	19M	·1562	11·33705	12·906	**534**	1	5	Mr	30○	·49	7	Ap	29●	·02	1	My	28	·56	3	Je	27	·09	4	Jl	26	·62
3636	592	457	19M	·4149	0·44547	9·064	**535**	2	2	Mr	19○	·86	5	My	17	·92	7	Je	16	·45	1	Jl	15	·98	3	Au	14	·51
									4	Ap	18	·39																
3637	593	458	18M	·6736	19·08450	7·198	**536**	3	1	Ap	6	·76	3	My	6	·29	4	Je	4	·82	6	Jl	4	·35	7	Au	2	·88
3638	594	459	18M	·9323	8·19294	3·356	**537**	5	6	Mr	27	·13	7	Ap	25	·66	2	My	25	·19	3	Je	23	·72	5	Jl	23	·25
																									6	Au	21	·78
3639	595	460	19M	·1910	26·83226	1·490	**538**	6	5	Ap	15	·02	6	My	14	·55	1	Je	13	·08	2	Jl	18○	·62	4	Au	11	·15
3640	596	461	19M	·4496	15·94039	25·202	**539**	7	2	Ap	4	·39	3	My	3	·92	5	Je	2	·45	6	Jl	1○	·98	1	Jl	31	·51
3641	597	462	18M	·7083	5·04883	21·359	**540**	1	6	Mr	23	·76	1	Ap	22	·29	2	My	21	·82	5	Jl	19	·88	7	Au	18	·41
																	4	Je	20●	·35								
3642	598	463	18M	·9670	23·68785	19·493	**541**	3	5	Ap	11	·66	7	My	11○	·19	1	Je	9●	·12	3	Jl	9	·25	4	Au	7	·78
3643	599	464	19M	·2257	12·79629	15·651	**542**	4	3	Ap	1	·02	4	Ap	30○	·55	6	My	30	·08	7	Je	28	·61	2	Jl	28	·14
3644	600	465	19M	·4844	1·90473	11·809	**543**	5	7	Mr	21	·39	1	Ap	19●○	·92	4	Je	17	·95	6	Jl	17	·51	1	Au	16	·04
													3	My	19	·45												
3645	601	466	18M	·7430	20·54375	9·942	**544**	6	6	Ap	8●	·29	7	My	7	·82	2	Je	6	·35	3	Jl	5	·88	5	Au	4	·41
3646	602	467	19M	·0017	9·65218	6·100	**545**	1	3	Mr	28●	·65	5	Ap	27	·28	6	My	26	·72	1	Je	25	·25	2	Jl	24	·78
3647	603	468	19M	·2604	28·29121	4·234	**546**	2	2	Ap	16	·55	4	My	16	·08	5	Je	14	·61	7	Jl	14	·14	1	Au	12○	·67
3648	604	469	19M	·5191	17·39964	0·392	**547**	3	6	Ap	5	·92	1	My	5	·45	2	Je	3	·98	4	Jl	3	·51	6	Au	2○	·04
3649	605	470	18M	·7778	6·50808	24·104	**548**	4	4	Mr	25	·29	5	Ap	23	·82	7	My	23	·35	1	Je	21	·88	4	Au	19	·94
																					3	Jl	21●	·41				
3650	606	471	19M	·0365	25·14711	22·238	**549**	6	3	Ap	13	·18	4	My	12	·71	6	Je	11○	·24	7	Jl	10	·78	2	Au	9	·31

N.B.—For Surya Sidddanta-figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Ārya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	8	·46	7	O	8	·09	1	N	6	·52	3	D	6	·05	**12**	4	Jr	4●	·58		6	F	3	·11	7	Mr	3	·64
2	Au	27	·83	4	S	26	·36	5	O	25	·89	7	N	24○	·42		1	D	23	·95	**13**	3	Jr	22	·48	5	F	21	·01
1	S	15	·72	3	O	15	·26	4	N	13○	·79	6	D	13	·32	**14**	7	Jr	11	·85		2	F	10	·38	3	Mr	11	·91
6	S	5	·09	7	O	4	·62	2	N	3○	·15	3	D	2	·68	**15**	5	Jr	1	·21		6	Jr	30	·74	1	Mr	1	·28
3	Au	25	·46	4	S	23	·99	6	O	23●	·52	1	N	22	·05		2	D	21	·58	**16**	4	Jr	20	·11	5	F	18	·64
2	S	12○	·36	3	O	11	·89	5	N	10	·42	6	D	9	·95	**17**	1	Jr	8	·48		3	F	7	·01	4	Mr	8○	·54
6	S	1○	·72	1	O	1	·25	2	O	30	·78	4	N	29	·32		5	D	28	·85	**18**	7	Jr	27	·38	1	F	25○	·91
5	S	20	·62	7	O	20	·15	1	N	18	·68	3	D	18	·21	**19**	4	Jr	16	·74		6	F	15●	·27	7	Mr	16	·80
2	S	9	·99	4	O	9	·52	6	N	8	·05	7	D	7	·58	**20**	2	Jr	6○	·11		3	F	4	·64	5	Mr	5	·17
7	Au	29	·36	1	S	27	·89	3	O	27	·42	4	N	25	·95		6	D	25○	·48	**21**	1	Jr	24	·01	2	F	22	·54
6	S	17	·25	7	O	16	·78	2	N	15	·31	3	D	14●○	·84	**22**	5	Jr	13	·38		7	F	11	·91	1	Mr	13	·44
3	S	6	·62	5	O	6	·15	6	N	4	·68	1	D	4●	·21	**23**	2	Jr	2	·74		4	F	1	·27	5	Mr	2	·80
1	Au	26	·99	2	S	25	·52	4	O	25○	·05	5	N	23●	·58		7	D	23	·11	**24**	1	Jr	21	·64	3	F	20	·17
6	S	13	·88	1	O	13○	·42	2	N	11	·95	4	D	11	·48	**25**	6	Jr	10	·01		7	F	8	·54	2	Mr	10	·07
4	S	3	·25	5	O	2○	·78	7	N	1	·31	1	N	30	·84		3	D	30	·37	**26**	4	Jr	28	·90	6	F	27	·44
1	Au	23	·62	3	S	22●	·15	6	N	20	·21		**Pausha**				7	D	19	·74	**27**	2	Jr	18	·27	5	Mr	18	·33
				4	O	21	·68						**Kshaya**									3	F	16○	·80				
7	S	11	·52	2	O	11	·05	3	N	9	·58	5	D	9	·11	**28**	6	Jr	7	·64		1	F	6●○	·77	2	Mr	6	·70
4	Au	30	·88	6	S	29	·41	7	O	28	·94	2	N	27	·48		4	D	27	·01	**29**	5	Jr	25○	·45	7	F	24	·07
3	S	18	·78	5	O	18	·31	6	N	16	·84	1	D	16	·37	**30**	2	Jr	14●	·90		4	F	13	·43	5	Mr	14	·96
1	S	8	·15	2	O	7	·68	4	N	6	·21	5	D	5○	·74	**31**	7	Jr	4	·27		1	F	2	·80	3	Mr	4	·33
5	Au	28	·52	7	S	27	·05	1	O	26	·58	3	N	25○	·11		4	D	24	·64	**32**	6	Jr	23	·17	7	F	21	·70
4	S	15	·41	5	O	14	·94	7	N	13●○	·47	2	D	13	·00	**33**	3	Jr	11	·54		5	F	10	·07	6	Mr	11	·60
1	S	4	·78	3	O	4	·31	4	N	2	·84	6	D	2	·37		7	D	31	·90	**34**	2	Jr	30	·43	3	F	28	·96
6	Au	25	·15	7	S	23○	·68	2	O	23●	·21	3	N	21	·74		5	D	21	·27	**35**	6	Jr	19	·80	1	F	18	·33
5	S	13●○	·04	6	O	12	·58	1	N	11	·11	2	D	10	·64	**36**	4	Jr	9	·17		5	F	7	·70	7	Mr	8○	·23
2	S	1○	·41	3	S	30	·94	5	O	30	·47	7	N	29	·00		1	D	28	·53	**37**	3	Jr	27	·06	4	F	25	·60
1	S	20	·31	2	O	19	·84	4	N	18	·37	5	D	17	·90	**38**	7	Jr	16○	·43		1	F	14●	·96	3	Mr	16	·49
5	S	9	·68	7	O	9	·21	1	N	7	·74	3	D	7	·27	**39**	4	Jr	5○	·80		6	F	4	·38	7	Mr	5	·86
3	Au	30	·04	4	S	28	·57	6	O	28	·10	7	N	26	·64		2	D	26●○	·17	**40**	3	Jr	24	·70	5	F	23	·23
1	S	16	·94	3	O	16	·47	5	N	15	·00	6	D	14●	·53	**41**	1	Jr	13	·06		2	F	11	·59	4	Mr	13	·12
6	S	6	·31	7	O	5	·84	2	N	4○	·37	3	D	3	·90	**42**	5	Jr	2	·43		6	Jr	31	·96	1	Mr	2	·49
3	Au	26	·68	5	S	25	·21	6	O	24○	·74	1	N	23	·27		2	D	22	·80	**43**	4	Jr	21	·33	5	F	19	·86
2	S	14	·57	4	O	14●○	·10	5	N	12	·63	7	D	12	·16	**44**	1	Jr	10	·70		3	F	9	·23	4	Mr	9	·76
6	S	2	·94	1	O	2	·47	3	N	1	·00	4	N	30	·53		6	D	30	·06	**45**	7	Jr	28	·59	2	F	27○	·12
4	Au	23○	·31	5	S	21●	·84	1	N	19	·90		**Pausha**				3	D	19	·43	**46**	4	Jr	17	·96	1	Mr	18	·02
				7	O	21	·37						**Kshaya**									6	F	16○	·49				
3	S	11	·20	4	O	10	·74	6	N	9	·27	7	D	8	·80	**47**	2	Jr	7	·32		3	F	5●○	·86	5	Mr	7	·39
7	Au	31	·55	2	S	30	·10	3	O	29	·63	5	N	28	·16		6	D	27	·69	**48**	1	Jr	26	·22	2	F	24	·76
6	S	18	·47	1	O	18	·00	2	N	16	·53	4	D	16○	·06	**49**	5	Jr	14	·59		7	F	13	·12	1	Mr	14	·65
3	S	7	·80	5	O	7	·37	6	N	5	·90	1	D	5●○	·43	**50**	2	Jr	3	·96		4	F	2	·49	6	Mr	4	·02

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week Day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
								⊙'s Anom col. 6					+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
								☾'s Anom col. 7					+ 1·976				+ 3·952				+ 5·928				+ 7·904			
3651	607	472	19M	·2951	14·25553	18·395	**550**	7	7	Ap	2	·55	2	My	2	·08	3	My	31○	·61	5	Je	30	·14	6	Jl	29	·67
3652	608	473	19M	·5538	3·36397	14·553	**551**	1	4	Mr	22	·92	6	Ap	21	·45	{ 7	My	20●	·98	4	Jl	19	·64	5	Au	17	·57
																	{ 2	Je	19	·51								
3653	609	474	18M	·8125	22·00300	12·688	**552**	2	3	Ap	9○	·82	5	My	9	·34	6	Je	7	·88	1	Jl	7	·41	2	Au	5	·94
3654	610	475	19M	·0711	11·11143	8·845	**553**	4	1	Mr	30○	·18	2	Ap	28	·71	4	My	28	·24	5	Je	26	·77	7	Jl	26	·30
3655	611	476	19M	·3299	0·21987	5·012	**554**	5	{ 5	Mr	19●○	·55	1	My	17	·61	3	Je	16	·14	4	Jl	15	·67	6	Au	14	·20
									{ 7	Ap	18	·08																
3656	612	477	19M	·5885	18·85889	3·136	**555**	6	4	Ap	7	·45	5	My	6	·98	7	Je	5	·51	2	Jl	5	·04	3	Au	3	·57
3657	613	478	18M	·8472	7·96733	26·848	**556**	7	1	Mr	26	·81	3	Ap	25	·34	4	My	24	·88	6	Je	23	·41	{ 7	Jl	22○	·94
																									{ 2	Au	21	·47
3658	614	479	19M	·1059	26·60635	24·982	**557**	2	7	Ap	14	·71	2	My	14	·24	3	Je	12	·77	5	Jl	12○	·30	6	Au	10	·83
3659	615	480	19M	·3646	15·71472	21·140	**558**	3	5	Ap	4	·08	6	My	3	·61	1	Je	2	·14	2	Jl	1○	·67	4	Jl	31	·20
3660	616	481	19M	·6233	4·82383	17·298	**559**	4	2	Mr	24	·45	3	Ap	22	·98	{ 5	My	22	·51	1	Jl	20	·57	3	Au	19	·10
																	{ 7	Je	21●	·04								
3661	617	482	18M	·8819	23·46225	15·431	**560**	5	1	Ap	11	·34	2	My	10○	·87	4	Je	9	·40	5	Jl	8	·94	7	Au	7	·47
3662	618	483	19M	·1406	12·57069	11·589	**561**	7	5	Mr	31	·71	7	Ap	30●○	·24	1	My	29	·77	3	Je	28	·30	4	Jl	27	·83
3663	619	484	19M	·3993	1·67912	7·747	**562**	1	3	Mr	21	·08	{ 4	Ap	19●	·61	7	Je	17	·67	2	Jl	17	·20	3	Au	15	·73
													{ 6	My	19	·14												
3664	620	485	19M	·6580	20·31814	5·881	**563**	2	1	Ap	8	·98	3	My	8	·51	5	Je	7	·03	6	Jl	6	·56	1	Au	5	·10
3665	621	486	18M	·9167	9·42658	2·038	**564**	3	6	Mr	28	·34	7	Ap	26	·87	2	My	26	·40	3	Je	24	·93	5	Jl	24	·46
3666	622	487	19M	·1753	28·06561	~~27·727~~ 0·172	**565**	5	5	Ap	16	·24	6	My	15	·77	1	Je	14	·30	2	Jl	13	·83	4	Au	12○	·36
3667	623	488	19M	·1440	17·17403	~~23·8[illegible]4~~ 23·884	**566**	6	2	Ap	5	·61	4	My	5	·14	5	Je	3	·67	7	Jl	3	·20	1	Au	1●	·73
3668	624	489	19M	·6927	6·28248	20·042	**567**	7	6	Mr	25	·97	1	Ap	24	·50	3	My	24	·04	{ 4	Je	22○	·57	7	Au	20	·63
																					{ 6	Jl	22●	·10				
3669	625	490	18M	·9514	24·92150	18·1[illegible]6	**568**	1	5	Ap	12	·85	7	My	12	·40	1	Je	10●○	·93	3	Jl	10	·46	4	Au	8	·99
3670	626	491	19M	·2101	14·02993	14·333	**569**	3	3	Ap	2	·74	4	My	1	·77	6	My	31○	·30	7	Je	29	·83	2	Jl	29	·34
3671	627	492	19M	·4687	3·13837	10·491	**570**	4	7	Mr	22	·61	2	Ap	21○	·13	{ 3	My	20	·66	6	Jl	18	·73	1	Au	17	·26
																	{ 5	Je	19	·19								
3672	628	493	19M	·7274	21·77749	8·625	**571**	5	6	Ap	10○	·50	1	My	10	·03	2	Je	8	·56	4	Jl	8	·09	5	Au	6	·62
3673	629	494	18M	·9861	10·88582	4·783	**572**	6	3	Mr	29○	·87	5	Ap	28	·40	6	My	27	·93	1	Je	26	·46	2	Jl	25	·99
3674	630	495	19M	·2448	29·52484	0·941	**573**	1	{ 1	Mr	19●	·23	4	My	17	·30	5	Je	15	·83	7	Jl	15	·36	1	Au	13	·89
									{ 2	Ap	17	·77																
3675	631	496	19M	·5035	18·63329	26·629	**574**	2	7	Ap	7	·13	1	My	6	·66	3	Je	5	·19	4	Jl	4	·72	6	Au	3○	·25
3676	632	497	19M	·7621	7·74172	22·787	**575**	3	4	Mr	27	·50	6	Ap	26	·03	7	My	25	·56	2	Je	24	·09	{ 3	Jl	23○	·62
																									{ 5	Au	22	·15
3677	633	498	19M	·0208	26·38074	20·920	**576**	4	3	Ap	14	·40	4	My	13	·93	6	Je	12	·46	1	Jl	11●○	·99	2	Au	10	·52
3678	634	499	19M	·2795	15·48918	17·078	**577**	6	7	Ap	3	·76	2	My	3	·29	3	Je	1	·83	7	Jl	1	·36	7	Jl	30	·89
3679	635	500	19M	·5382	4·59761	13·236	**578**	7	5	Mr	24	·13	6	Ap	22	·66	{ 1	My	22○	·19	4	Jl	20	·25	5	Au	18	·78
																	{ 3	Je	20	·72								
3680	636	501	19M	·7969	23·23664	11·370	**579**	1	4	Ap	12	·03	5	My	11○	·56	7	Je	10	·09	1	Jl	9	·62	3	Au	8	·15
3681	637	502	19M	·0555	12·34508	7·527	**580**	2	1	Mr	31	·40	2	Ap	29	·93	4	My	29	·46	5	Je	27	·99	7	Jl	27	·52
3682	638	503	19M	·3142	1·45351	3·684	**581**	4	{ 5	Mr	20○	·76	1	My	18	·82	3	Je	17	·35	4	Jl	16	·89	6	Au	15	·42
									{ 7	Ap	19	·29																
3683	639	504	19M	·5729	20·09253	1·819	**582**	5	4	Ap	8	·66	6	My	8	·19	7	Je	6	·72	2	Jl	6	·25	3	Au	4	·78
3684	640	505	19M	·8316	9·20097	25·528	**583**	6	2	Mr	29	·03	3	Ap	27	·56	5	My	27	·09	6	Je	25	·62	{ 1	Jl	25	·15
																									{ 2	Au	23●○	·68
3685	641	506	19M	·0903	27·83999	23·665	**584**	7	7	Ap	15	·93	2	My	15	·46	3	Je	13	·99	5	Jl	13	·52	7	Au	12	·85
3686	642	507	19M	·3490	16·94843	19·823	**585**	2	5	Ap	5	·29	6	My	4	·82	1	Je	3	·35	2	Jl	2○	·88	4	Au	1●	·41
3687	643	508	19M	·6076	6·05687	15·980	**586**	3	2	Mr	25	·66	4	Ap	24	·19	5	My	23	·72	{ 7	Je	22○	·25	3	Au	20	·31
																					{ 1	Jl	21	·78				
3688	644	509	19M	·8663	24·69588	14·114	**587**	4	1	Ap	13	·16	3	My	13	·09	4	Je	11●○	·62	6	Jl	11	·15	7	Au	9	·68
3689	645	510	19M	·1250	13·80432	10.273	**588**	5	5	Ap	1	·92	7	My	1○	·45	1	My	30●	·99	3	Je	29	·52	5	Jl	29	·05

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77422					+ 295·30588				+324·83647 / +354·36765			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
1	Au	28	·20	2	S	26	·73	4	O	26	·26	5	N	24●○	·80		7	D	24	·33	**51**	1	Jr	22	·86	3	F	21	·39
7	S	16	·14	1	O	15	·63	3	N	14	·16	4	D	13	·69	**52**	6	Jr	12	·22		7	F	10	·75	2	Mr	11	·28
4	S	4	·47	6	O	4○	·00	7	N	2	·53	2	D	2	·06		3	D	31	·59	**53**	5	Jr	30	·12	6	F	28	·65
1	Au	24	·84	3	S	23○	·37	4	O	22	·90	6	N	21	·43		7	D	20	·96	**54**	2	Jr	19	·49	4	F	18	·02
7	S	12○	·73	2	O	12	·26	3	N	10	·79	5	D	10	·32	**55**	6	Jr	8	·86		1	F	7	·39	2	Mr	8●	·92
5	S	2	·10	6	O	1	·63	1	O	31	·16	2	N	29	·69		4	D	29	·22	**56**	5	Jr	27○	·75	7	F	26	·28
4	S	20	·00	5	O	19	·53	7	N	18	·06	1	D	17	·59	**57**	3	Jr	16○	·12		4	F	14	·65	6	Mr	16	·18
1	S	9	·36	2	O	8	·90	4	N	7	·43	5	D	6	·96	**58**	7	Jr	5○	·49		2	F	4	·02	3	Mr	5	·55
5	Au	29	·73	7	S	28	·25	1	O	27	·79	3	N	26	·32		4	D	25	·85	**59**	6	Jr	24	·38	7	F	22	·92
4	S	17	·63	6	O	17	·15	7	N	15○	·69	2	D	15	·22	**60**	3	Jr	13	·75		5	F	12	·28	6	Mr	12	·81
2	S	6	·00	3	O	5	·53	5	N	4○	·06	6	D	3●	·59	**61**	1	Jr	2	·12		2	Jr	31	·65	4	Mr	2	·18
6	Au	26	·36	7	S	24	·89	2	O	24○	·42	3	N	22	·96		5	D	22	·49	**62**	7	Jr	21	·02	4	F	19	·55
5	S	14	·26	6	O	13●	·79	1	N	12	·32	2	D	11	·85	**63**	4	Jr	10	·38		5	F	8	·91	7	Mr	10○	·44
2	S	3○	·63	4	O	3●	·16	5	N	1	·69	7	D	1	·22		1	D	30	·75	**64**	3	Jr	29	·28	4	F	27○	·81
{ 6	Au	22○	·99	3	O	21	·05	5	N	19	·58	**Pausha**					6	D	19	·12	**65**	{ 7	Jr	17	·65	3	Mr	17	·71
{ 1	S	21	·52									**Kshaya**										{ 2	F	16○	·18				
5	S	10	·89	7	O	10	·42	1	N	8	·95	3	D	8	·48	**66**	5	Jr	7	·01		6	F	5●	·54	1	Mr	7	·07
3	Au	31	·26	4	S	29	·79	6	O†	29	·32	7	N	27	·85		2	D	27○	·38	**67**	4	Jr	25	·91	5	F	24	·44
2	S	19	·16	3	O	18	·69	5	N	17	·22	6	D	16○	·75	**68**	1	Jr	15	·28		2	F	13	·81	4	Mr	14	·34
6	S	7	·20	1	O	7	·05	2	N	5	·59	4	D	5○	·12	**69**	5	Jr	3	·64		7	F	2	·18	1	Mr	3	·18
3	Au	27	·89	5	S	26	·42	6	O	25	·95	1	N	24●	·48		3	D	24	·01	**70**	4	Jr	22	·54	6	F	21	·07
2	S	15	·79	4	O	15○	·32	5	N	13	·85	7	D	13	·38	**71**	1	Jr	11	·91		3	F	10	·44	4	Mr	11	·97
7	S	5	·15	1	O	4○	·68	3	N	3	·21	4	D	2	·75	**72**	6	Jr	1	·28		7	Jr	30	·81	2	F	29	·34
4	Au	24	·52	6	S	23●○	·06	7	O	22	·58	2	N	21	·11		3	D	20	·64	**73**	5	Jr	19	·17	6	F	17	·70
3	S	12●	·42	4	O	11	·95	6	N	10	·48	1	D	10	·01	**74**	2	Jr	8	·54		4	F	7○	·07	5	Mr	8●	·60
7	S	1●	·79	2	O	1	·32	3	O	30	·85	5	N	29	·38		6	D	28	·91	**75**	1	Jr	27○	·44	2	F	25	·97
6	S	20	·68	1	O	20	·23	2	N	18	·74	4	D	18	·27	**76**	5	Jr	16○	·81		7	F	15	·34	1	Mr	15	·87
4	S	9	·05	5	O	8	·58	7	N	7	·11	1	D	6	·64	**77**	3	Jr	5●	·17		4	F	3	·70	6	Mr	5	·20
1	Au	29	·42	2	S	27	·95	4	O	27	·48	6	N	26○	·01		7	D	25●	·54	**78**	2	Jr	24	·07	3	F	22	·63
7	S	17	·31	1	O	16	·85	3	N	15○	·38	4	D	14	·91	**79**	6	Jr	13	·44		7	F	11	·97	2	Mr	13	·50
4	S	6	·68	6	O	6	·21	7	N	4○	·74	2	D	4	·27	**80**	3	Jr	2	·80		5	F	1	·33	6	Mr	1	·87
2	Au	26	·05	3	S	24	·58	5	O	24●	·11	6	N	22	·64		1	D	22	·17	**81**	2	Jr	20	·70	4	F	19	·23
7	S	13○	·95	2	O	13	·48	4	N	12	·01	5	D	11	·54	**82**	7	Jr	10	·07		1	F	8	·60	3	Mr	10○	·13
5	S	3○	·31	6	O	2	·84	1	N	1	·37	2	N	30	·91		4	D	30	·44	**83**	6	Jr	28	·97	7	F	27○	·50
4	S	22	·21	5	O	21	·74	7	N	20	·27	1	D	19	·50	**84**	3	Jr	18	·33		4	F	16●	·86	6	Mr	17	·39
1	S	10	·58	3	O	10	·11	4	N	8	·64	6	D	8	·17	**85**	7	Jr	6○	·70		2	F	5	·23	3	Mr	6	·76
5	Au	30	·95	7	S	29	·48	2	O	29	·01	3	N	27	·54		5	D	27○	·07	**86**	6	Jr	25	·60	1	F	24	·13
4	S	18	·84	6	O	18	·37	7	N	16	·90	2	D	16●○	·39	**87**	3	Jr	14	·97		5	F	13	·50	7	Mr	15	·03
2	S	8	·21	3	O	7	·74	5	N	6	·27	6	D	5	·80	**88**	1	Jr	4	·33		2	F	2	·86	4	Mr	3	·39
6	Au	27	·58	1	S	26	·11	3	O	25○	·64	4	N	24	·17		5	D	23	·70	**89**	7	Jr	22	·23	1	F	20	·76

	Vaisakha	Jyeshta	Ashada	Sravana	Bhadrapada
☉'s Anom col. 6		+ 29·53059	+ 59·06117	+ 88·59176	+ 118·12233
☾'s Anom col. 7		+ 1·976	+ 3·952	+ 5·928	+ 7·904

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year: Month and day A.D.	Commencement of Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Week-day of 1st January	Vaisakha: Week-day	Month	Day	Fraction	Jyeshta: Week-day	Month	Day	Fraction	Ashada: Week-day	Month	Day	Fraction	Sravana: Week-day	Month	Day	Fraction	Bhadrapada: Week-day	Month	Day	Fraction
3690	646	511	19M	·3837	2·91276	6·430	**589**	7	3	Mr	22	·29	4	Ap	20○	·82	7	Je	18	·88	2	Jl	18	·41	3	Au	16	·94
													6	My	20●	·35												
3691	647	512	19M	·6424	21·55178	4·563	**590**	1	2	Ap	10○	·19	3	My	9	·72	5	Je	8	·25	6	Jl	7	·78	1	Au	6	·31
3692	648	513	19M	·9010	10·66022	0·721	**591**	2	6	Mr	30	·56	1	Ap	29	·09	2	My	28	·62	4	Je	27	·15	5	Jl	26	·68
3693	649	514	19M	·1597	29·29925	26·409	**592**	3	4	Mr	18●	·92	6	My	16	·98	1	Je	15	·51	3	Jl	15	·05	4	Au	13○	·58
									5	Ap	17	·45																
3694	650	515	19M	·4184	18·40757	22·568	**593**	5	2	Ap	6	·82	4	My	6	·35	5	Je	4	·88	7	Jl	4	·41	1	Au	2○	·94
3695	651	516	19M	·6771	7·51611	18·725	**594**	6	7	Mr	27	·19	1	Ap	25	·75	3	My	25	·25	4	Je	23	·78	6	Jl	23●○	·31
																									7	Au	21	·84
3696	652	517	19M	·9358	26·15445	16·858	**595**	7	6	Ap	15	·09	7	My	14	·62	2	Je	13	·15	3	Jl	12	·68	5	Au	11	·21
3697	653	518	19M	·1944	15·26357	13·016	**596**	1	3	Ap	3	·45	4	My	2	·98	6	Je	1○	·51	1	Jl	1	·04	2	Jl	30	·57
3698	654	519	19M	·4531	4·37201	9·174	**597**	3	7	Mr	23	·22	2	Ap	22	·35	3	My	21○	·88	6	Jl	19	·94	1	An	18	·47
																	5	Je	20	.41								
3699	655	520	19M	·7118	23·01103	7·308	**598**	4	6	Ap	11	·72	1	My	11●	·25	2	Je	9	·78	4	Jl	9	·31	5	Au	7	·84
3700	656	521	19M	·9705	12·11946	3·466	**599**	5	4	Ap	1○	·08	5	Ap	30●	·62	7	My	30	·15	1	Je	28	·68	3	Jl	28	·21
3701	657	522	19M	·2292	1·22790	27·178	**600**	6	1	Mr	20○	·46	4	My	18	·52	6	Je	17	·05	7	Jl	16	·58	2	Au	15	·11
									2	Ap	18	·99																
3702	658	523	19M	·4878	19·86693	25·312	**601**	1	7	Ap	8	·36	1	My	7	·89	3	Je	6	·42	4	Jl	5	·95	6	Au	4	·48
3703	659	524	19M	·7465	8·97535	21·469	**602**	2	4	Mr	28	·72	6	Ap	27	·25	7	My	26	·79	2	Je	25	·32	3	Jl	24	·85
																									5	Au	23	·38
3704	660	525	20M	·0052	27·61438	19·603	**603**	3	3	Ap	16	·62	5	My	16	·15	6	Je	14	·68	1	Jl	14○	·21	2	Au	12	·74
3705	661	526	19M	·2639	16·72282	15·761	**604**	4	7	Ap	4	·99	2	My	4	·52	4	Je	3	·05	5	Jl	2○	·58	7	Au	1	·11
3706	662	527	19M	·5225	5·83125	11·919	**605**	6	5	Mr	25	·38	6	Ap	23	·89	1	My	23	·42	2	Je	21●○	·95	6	Au	20	·01
																					4	Jl	21	·48				
3707	663	528	19M	·7812	24·47028	10·053	**606**	7	4	Ap	13	·25	5	My	12○	·78	7	Je	11●	·31	1	Jl	10	·85	3	Au	9	·38
3708	66[illegible]	529	20M	·0399	13·57872	6·210	**607**	1	1	Ap	2	·62	3	My	2○	·15	4	My	31	·68	6	Je	30	·21	7	Jl	29	·74
3709	665	530	19M	·2986	2·68714	2·368	**608**	2	5	Mr	21	·99	7	Ap	20●○	·52	3	Je	18	·58	5	Jl	18	·11	6	Au	16	·64
													2	My	20	·05												
3710	666	531	19M	·5573	21·32617	0·502	**609**	4	4	Ap	9●	·89	6	My	9	·42	7	Je	7	·95	2	Jl	7	·48	4	Au	6	·01
3711	667	532	19M	·8160	10·43461	24·215	**610**	5	2	Mr	30	·25	3	Ap	28	·78	5	My	28	·31	6	Je	26	·84	1	Jl	26	·37
3712	668	533	20M	·0746	29·07363	22·348	**611**	6	6	Mr	19	·62	2	My	17	·68	4	Je	16	·21	6	Jl	15	·74	7	Au	14○	·27
									1	Ap	18	·15																
3713	669	534	19M	·3333	18·18207	18·506	**612**	7	5	Ap	6	·52	7	My	6	·05	1	Je	4	·58	3	Jl	4	·11	4	Au	2○	·64
3714	670	535	19M	·5920	7·29050	14·663	**613**	2	2	Mr	26	·88	4	Ap	25	·41	5	My	24	·95	7	Je	23	·48	2	Jl	23●	·01
																									3	Au	21	·54
3715	671	536	19M	·8507	25·92952	12·797	**614**	3	1	Ap	14	·78	3	My	14	·31	4	Je	12○	·84	6	Jl	12	·37	7	Au	10	·90
3716	672	537	20M	·1094	15·03796	8·955	**615**	4	6	Ap	4	·15	7	My	3	·68	2	Je	2○	·21	3	Jl	1	·74	5	Jl	31	·27
3717	673	538	19M	·3680	4·14640	5·112	**616**	5	3	Mr	23	·52	5	Ap	22	·05	6	My	21●○	·58	2	Jl	19	·64	4	Au	18	·17
																	1	Je	20	·11								
3718	674	539	19M	·6267	22·78542	3·246	**617**	7	2	Ap	11○	·41	3	My	10	·94	5	Je	9	·47	7	Jl	9	·01	1	Au	7	·54
3719	675	540	19M	·8854	11·89386	26·959	**618**	1	6	Mr	31●○	·78	1	Ap	30	·31	2	My	29	·84	4	Je	28	·37	5	Jl	27	·90
3720	676	541	20M	·1441	1·00229	23·116	**619**	2	4	Mr	21○	·15	7	My	19	·21	1	Je	17	·74	3	Jl	17	·27	4	Au	15	·80
									5	Ap	19	·68																
3721	677	542	19M	·4028	19·64131	21·250	**620**	3	3	Ap	8	·04	4	My	7	·58	6	Je	6	·11	7	Jl	5	·64	2	Au	4	·17
3722	678	543	19M	·6614	8·74975	17·408	**621**	5	7	Mr	28	·41	1	Ap	26	·94	3	My	26	·47	5	Je	25	·00	6	Jl	24○	·53
																									1	Au	23	·07
3723	679	544	19M	·9201	27·38878	15·542	**622**	6	6	Ap	16	·31	7	My	15	·84	2	Je	14	·37	3	Jl	13○	·90	5	Au	12	·43
3724	680	545	20M	·1788	16·49720	11·699	**623**	7	3	Ap	5	·68	5	My	5	·21	6	Je	3	·74	1	Jl	3○	·27	2	Au	1	·80
3725	681	546	19M	·4375	5·60564	7·857	**624**	1	1	Mr	25	·06	2	Ap	23	·57	4	My	23○	·11	5	Je	21	·64	1	Au	19	·70
																					7	Jl	21	·17				
3726	682	547	19M	·6962	24·24467	5·990	**625**	3	6	Ap	12	·94	1	My	12○	·47	3	Je	11	·00	4	Jl	10	·53	6	Au	9	·06
3727	683	548	19M	·9548	13·35310	2·149	**626**	4	4	Ap	2	·31	5	My	1○	·84	7	My	31	·37	1	Je	29	·90	3	Jl	29	·43

N.B.— For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{+ 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	15	·47	7	O	15●○	·01	1	N	13	·54	3	D	13	·07	**90**	4	Jr	11	·60		6	F	10	·13	7	Mr	11	·66
2	S	4	·84	4	O	4●○	·37	5	N	2	·90	7	D	2	·43		2	D	31	·96	**91**	3	Jr	30	·49	5	Mr	1	·03
7	Au	25	·21	1	S	23●	·74	3	O	23	·27	4	N	21	·80		6	D	21	·33	**92**	7	Jr	19	·86	2	F	18○	·39
6	S	12	·11	7	O	11	·64	2	N	10	·17	3	D	9	·70	**93**	5	Jr	8	23		6	F	6○	·76	1	Mr	8	·29
3	S	1	·47	5	O	1	·00	6	O	30	·53	1	N	29	·07		2	D	28	·60	**94**	4	Jr	27●○	·13	5	F	25	·66
2	S	20	·37	3	O	19	·90	5	N	18	·43	6	D	17	·96	**95**	1	Jr	16●	·55		3	F	15	·02	4	Mr	16	·55
6	S	9	·74	1	O	9	·27	2	N	7	·80	4	D	7○	·33	**96**	5	Jr	5	·86		7	F	4	·39	1	Mr	4	·92
4	Au	29	·12	5	S	27	·64	7	O	27	·17	1	N	25○	·70		3	D	25●	·23	**97**	4	Jr	23	·76	6	F	22	·29
3	S	17	·00	4	O	16	·53	6	N	15○	·06	7	D	14	·59	**98**	2	Jr	13	·13		3	F	11	·66	5	Mr	13	·19
7	S	6	·37	1	O	5	·90	3	N	4	·43	4	D	3	·96	**99**	6	Jr	2	·49		1	F	1	·02	2	Mr	2	·55
4	Au	26	·74	6	S	25○	·27	7	O	24	·80	2	N	23	·33		6	D	22	·86	**600**	5	Jr	21	·39	6	F	19	·92
3	S	13○	·64	5	O	13	·17	6	N	11	·70	1	D	11	·23	**01**	2	Jr	9	·77		4	F	8	·30	5	Mr	9●○	·83
1	S	3○	·01	2	O	2	·54	4	N	1	·07	5	N	30	·60		7	D	30	·13	**02**	1	Jr	28	·66	3	F	27	·1Ↄ
6	S	21	·91	1	O	21	·44	2	N	19	·97	4	D	19	·50	**03**	6	Jr	18○	·03		7	F	16	·56	2	Mr	18	·09
4	S	11	·27	5	O	10	·81	7	N	9	·34	1	D	8	·87	**04**	3	Jr	7●○	·40		4	F	5	·93	6	Mr	6	·46
1	Au	30	·64	3	S	29	·17	4	O	28	·70	6	N	27	·23		7	D	26●○	·16	**05**	2	Jr	25	·29	3	F	23	·83
7	S	18	·54	2	O	18	·07	3	N	16	·60	5	D	16	·13	**06**	6	Jr	14	·66		1	F	13	·19	2	Mr	14	·72
4	S	7	·91	6	O	7	·44	7	N	5○	·97	2	D	5	·50	**07**	4	Jr	4	·03		5	F	2	·56	7	Mr	4	·09
2	Au	28	·27	3	S	26	·80	5	O	26○	·33	6	N	24	·87		1	D	24	·40	**08**	2	Jr	22	·93	4	F	21	·46
1	S	15	·17	2	O	14○	·70	4	N	13	·23	5	D	12	·76	**09**	7	Jr	11	·29		7	F	9	·82	3	Mr	11	·35
5	S	4	·54	7	O	4	·07	1	N	2	·60	3	D	2	·13		4	D	31	·66	**10**	5	Jr	30	·19	7	F	28○	·72
2	Au	24○	·91	{4 {5	S O	23 22	·44 ·97	**Margasira Kshaya**				7	N	21	·50		2	D	21	·03	**11**	3	Jr	19	·56	5	F	18○	·09
1	S	12	·80	3	O	12	·33	4	N	10	·86	6	D	10	·39	**12**	7	Jr	8	·93		2	F	7○	·46	3	Mr	7	·99
6	S	1	·17	7	S	30	·70	2	O	30	·23	3	N	28	·76		5	D	28	·29	**13**	6	Jr	26	·82	1	F	25	·35
5	S	20	·07	6	O	19	·60	1	N	18	·13	2	D	17○	·66	**14**	4	Jr	16	·19		5	F	14	·72	7	Mr	16	·25
2	S	9	·43	3	O	8	·97	5	N	7	·50	7	D	7○	·03	**15**	1	Jr	5	·56		3	F	4	·09	4	Mr	5	·62
6	Au	29	·80	1	S	28	·33	2	O	27	·86	4	N	26○	·39		5	D	25	·92	**16**	7	Jr	24	·45	2	F	23	·98
5	S	16	·70	7	O	16	·23	1	N	14●	·76	3	D	14	·29	**17**	4	Jr	12	·82		6	F	11	·35	7	Mr	12	·88
3	S	6	·07	4	O	5○	·60	6	N	4●	·13	7	D	3	·66	**18**	2	Jr	2	·19		3	Jr	31	·72	5	Mr	2	·25
7	Au	26	·43	1	S	24○	·96	3	O	24●	·49	5	N	23	·03		6	D	22	·56	**19**	1	Jr	21	·19	2	F	19	·62
6	S	14○	·33	7	O	13	·86	2	N	12	·39	3	D	11	·92	**20**	5	Jr	10	·45		6	F	8	·98	1	Mr	9●	·51
3	S	2●	·70	5	O	2	·23	6	O	31	·76	1	N	30	·29		2	D	29	·82	**21**	4	Jr	28○	·35	5	F	26	·88
2	S	21	·60	4	O	21	·13	5	N	19	·66	7	D	19	·19	**22**	1	Jr	17○	·72		3	F	16	·25	4	Mr	17	·78
6	S	10	·96	1	O	10	·49	3	N	9	·12	4	D	8	·55	**23**	6	Jr	7○	·09		7	F	5	·62	2	Mr	7	·15
4	Au	31	·33	5	S	29	·86	7	O	29	·39	1	N	27	·92		3	D	27●	·45	**24**	4	Jr	25	·98	6	F	24	·51
3	S	18	·23	4	O	17	·73	6	N	16○	·29	7	D	15●	·82	**25**	2	Jr	14	·35		3	F	12	·88	5	Mr	14	·41
7	S	7	·60	2	O	7	·13	3	N	5○	·66	5	D	5	·19	**26**	6	Jr	3	·72		1	F	2	·25	2	Mr	3	·78
4	Au	27	·96	6	S	26	·49	1	O	26●○	·02	2	N	24	·55		4	D	24	·08	**27**	5	Jr	22	·67	7	F	21	·15

									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						**Vaisakha**				**Jyeshta**				**Ashada**				**Sravana**				**Bhadrapada**			
Kaliyuga	Vikrama Era	Saka Era	Month and day A.D.	Fraction of day	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3728	684	549	20M	·1213	2·46154	25·861	**627**	5	1	Mr	22	·68	3	Ap	21●	·21	6	Je	19	·27	7	Jl	18	·80	2	Au	17	·33
													4	My	20	·74												
3729	685	550	19M	·4722	21·10057	23·985	**628**	6	7	Ap	9●	·57	2	My	9	·10	3	Je	7	·63	5	Jl	7	·17	6	Au	5	·70
3730	686	551	19M	·7309	10·20899	20·153	**629**	1	4	Mr	29	·94	6	Ap	28	·47	1	My	28	·00	2	Je	26	·53	4	Jl	26	·06
3731	687	552	19M	·9896	28·84802	18·286	**630**	2	3	Ap	17	·84	5	My	17	·37	6	Je	15	·90	1	Jl	15	·43	2	Au	13●○	·96
3732	688	553	20M	·2483	17·95646	14·444	**631**	3	1	Ap	7	·21	2	My	6	·74	4	Je	5	·27	5	Jl	4	·80	7	Au	3	·33
3733	689	554	19M	·5069	7·06489	10·602	**632**	4	5	Mr	26	·56	7	Ap	25	·10	1	My	24	·63	3	Je	23○	·16	6	Au	21	·23
																					4	Jl	22	·69				
3734	690	555	19M	·7656	25·70392	8·735	**633**	6	4	Ap	14	·47	6	My	14	·00	7	Je	12●○	·53	2	Jl	12	·06	3	Au	10	·59
3735	691	556	20M	·0243	14·81236	4·893	**634**	7	1	Ap	3	·84	3	My	3	·37	4	Je	1○	·90	6	Jl	1	·43	7	Jl	30	·96
3736	692	557	20M	·2830	3·92078	1·051	**635**	1	6	Mr	24	·20	7	Ap	22○	·73	2	My	22	·27	5	Jl	20	·33	6	Au	18	·86
																	3	Je	20	·88								
3737	693	558	19M	·5417	22·55981	26·739	**636**	2	5	Ap	11○	·10	6	My	10	·63	1	Je	9	·16	2	Jl	8	·69	4	Au	7	·22
3738	694	559	19M	·8003	11·66825	22·897	**637**	4	2	Mr	31●○	·47	4	Ap	30	·00	5	My	29	·53	7	Je	28	·07	1	Jl	27	·59
3739	695	560	20M	·0590	0·77698	19·055	**638**	5	6	Mr	20●	·84	2	My	18	·90	4	Je	17	·43	5	Jl	16	·96	7	Au	15	·49
									1	Ap	19	·37																
3740	696	561	20M	·3177	19·41570	17·188	**639**	6	5	Ap	8	·73	7	My	8	·26	1	Je	6	·79	3	Jl	6	·33	4	Au	4○	·86
3741	697	562	19M	·5764	8·52414	13·346	**640**	7	3	Mr	28	·10	4	Ap	26	·63	6	My	26	·16	7	Je	24	·69	2	Jl	24○	·22
																									3	Au	22	·75
3742	698	563	19M	·8351	27·16316	11·480	**641**	2	2	Ap	16	·00	3	My	15	·53	5	Je	14	·06	6	Jl	13○	·59	1	Au	12	·12
3743	699	564	20M	·0937	16·27160	7·638	**642**	3	6	Ap	5	·37	7	My	4	·90	2	Je	3	·43	3	Jl	2	·96	5	Au	1	·49
3744	700	565	20M	·3524	5·38004	3·795	**643**	4	3	Mr	25	·73	5	Ap	24	·26	6	My	23○	·79	2	Jl	21	·85	4	Au	20	·39
																	1	Je	22●	·32								
3745	701	566	19M	·6111	24·01906	1·929	**644**	5	2	Ap	12	·63	4	My	12○	·16	5	Je	10	·69	7	Jl	10	·22	1	Au	8	·75
3746	702	567	19M	·8698	13·12749	25·641	**645**	7	7	Ap	2	·00	1	My	1	·53	3	My	31	·06	4	Je	29	·59	6	Jl	29	·12
3747	703	568	20M	·1285	2·23593	21·799	**646**	1	4	Mr	22○	·36	5	Ap	20●	·89	1	Je	18	·96	3	Jl	18	·41	5	Au	17	·02
													7	My	20	·43												
3748	704	569	20M	·3871	20·87495	19·933	**647**	2	3	Ap	10	·26	4	My	9	·79	6	Je	8	·32	7	Jl	7	·85	2	Au	6	·39
3749	705	570	19M	·6458	9·98339	16·091	**648**	3	7	Mr	29	·63	2	Ap	28	·16	3	My	27	·69	5	Je	26	·22	6	Jl	25	·75
3750	706	571	19M	·9045	28·62242	14·234	**649**	5	6	Ap	17	·53	1	My	17	·06	2	Je	15	·59	4	Jl	15	·12	5	Au	13	·65
3751	707	572	20M	·1632	17·73084	10·383	**650**	6	3	Ap	6	·89	5	My	6	·42	6	Je	4	·95	1	Jl	4○	·49	3	Au	3●	·02
3752	708	573	20M	·4219	6·83928	6·540	**651**	7	1	Mr	27	·26	2	Ap	25	·79	4	My	25	·32	5	Je	23○	·85	1	Au	21	·91
																					7	Jl	23	·38				
3753	709	574	19M	·6805	25·47831	4·694	**652**	1	7	Ap	14	·16	1	My	13	·69	3	Je	12○	·22	4	Jl	11	·75	6	Au	10	·28
3754	710	575	19M	·9392	14·58674	0·831	**653**	3	4	Ap	3	·53	6	My	3	·06	7	Je	1●	·59	2	Jl	1	·12	3	Jl	30	·65
3755	711	576	20M	·1979	3·69518	24·544	**654**	4	1	Mr	23	·89	3	Ap	22○	·42	4	My	21	·95	1	Jl	20	·01	2	Au	18	·55
																	6	Je	20	·48								
3756	712	577	20M	·4566	22·33420	22·677	**655**	5	7	Ap	11●○	·79	2	My	11	·32	3	Je	9	·85	5	Jl	9	·38	6	Au	7	·91
3757	713	578	19M	·7153	11·44264	18·835	**656**	6	5	Mr	31	·16	6	Ap	29	·69	1	My	29	·22	2	Je	27	·75	4	Jl	27	·28
3758	714	579	19M	·9738	0·55107	14·993	**657**	1	2	Mr	20	·52	5	My	18	·59	7	Je	17	·12	1	Jl	16	·65	3	Au	15○	·18
									4	Ap	19	·05																
3759	715	580	20M	·2325	19·19003	13·127	**658**	2	1	Ap	8	·42	2	My	7	·95	4	Je	6	·48	6	Jl	6	·01	7	Au	4○	·54
3760	716	581	20M	·4913	8·29914	9·285	**659**	3	5	Mr	28	·79	7	Ap	27	·32	1	My	26	·85	3	Je	25	·38	4	Jl	24●○	·91
																									6	Au	23	·44
3761	717	582	19M	·7500	26·93756	7·418	**660**	4	4	Ap	15	·69	6	My	15	·22	7	Je	13	·75	2	Jl	13●	·28	3	Au	11	·81
3762	718	583	20M	·0087	16·04600	3·576	**661**	6	2	Ap	5	·05	3	My	4	·58	5	Je	3○	·11	6	Jl	2●	·65	1	Au	1	·18
3763	719	584	20M	·2673	5·15443	27·288	**662**	7	6	Mr	25	·42	7	Ap	23	·95	2	My	23●○	·48	5	Jl	21	·54	7	Au	20	·07
																	4	Je	22	·01								
3764	720	585	20M	·5260	23·79345	25·422	**663**	1	5	Ap	13	·32	6	My	12●	·85	1	Je	11	·38	2	Jl	10	·91	4	Au	9	·44
3765	721	586	19M	·7847	12·90189	21·580	**664**	2	2	Ap	1○	·69	4	My	1	·22	5	My	30	·75	7	Je	29	·28	1	Jl	28	·81
3766	722	587	20M	·0434	2·01033	17·737	**665**	4	7	Mr	22○	·05	1	Ap	20●	·58	4	Je	18	·64	6	Jl	18	·17	7	Au	16	·71
													3	My	20	·11												

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

+ 147·65293   + 177·18353   + 206·71411   + 236·24470   + 265·77529   + 295·30588   { +324·83647 / +354·36705 }

+ 9·880   + 11·856   + 13·832   + 15·808   + 17·784   + 19·760   { + 21·736 / + 23·712 }

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3	S	15	·86	5	O	15●	·39	6	N	13	·92	1	D	13	·45	**28**	2	Jr	11	·98		4	F	10	·51	6	Mr	11○	·04
1	S	4○	·23	2	O	3●	·76	4	N	2	·29	5	D	1	·82		7	D	31	·35	**29**	1	Jr	29	·88	3	F	28○	·41
5	Au	24○	·59	1	O	22	·65	3	N	21	·19		**Pausha**				4	D	20	·72	**30**	6	Jr	19	·25	7	F	17○	·78
7	S	23	·12										**Kshaya**													2	Mr	19	·31
4	S	12	·49	6	O	12	·02	7	N	10	·55	2	D	10	·08	**31**	3	Jr	8	·61		5	F	7●	·14	6	Mr	8	·67
1	S	1	·86	3	O	1	·39	4	O	30	·92	6	N	29	·45		7	D	28○	·98	**32**	2	Jr	27●	·51	4	F	26	·05
7	S	19	·76	2	O	19	·29	3	N	17	·82	5	D	17○	·35	**33**	6	Jr	15	·88		1	F	14	·41	2	Mr	15	·94
5	S	9	·12	6	O	8	·65	1	N	7	·18	2	D	6○	·71	**34**	4	Jr	5	·25		5	F	3	·78	7	Mr	5	·31
2	Au	29	·49	4	S	28	·02	5	O	27	·55	7	N	26●	·08		1	D	25	·61	**35**	3	Jr	24	·14	4	F	22	·67
1	S	17	·39	2	O	16○	·92	4	N	15	·45	5	D	14	·98	**36**	7	Jr	13	·51		2	F	12	·04	3	Mr	12	·57
5	S	5	·75	7	O	5○	·29	1	N	3	·82	3	D	3	·35	**37**	4	Jr	1	·88		6	Jr	31	·41	7	Mr	1	·94
3	Au	26	·12	4	S	24●○	·65	6	O	24	·18	7	N	22	·71		2	D	22	·24	**38**	3	Jr	20	·77	5	F	19	·30
2	S	14	·02	3	O	13	·55	5	N	12	·08	6	D	11	·61	**39**	1	Jr	10	·14		2	F	8○	·67	4	Mr	10	·20
6	S	3●	·39	7	O	2	·92	2	N	1	·45	4	N	30	·98		5	D	30	·51	**40**	7	Jr	29○	·04	1	F	27	·53
5	S	21	·28	6	O	20	·81	1	N	19	·35	2	D	18	·88	**41**	4	Jr	17●○	·41		5	F	15	·94	7	Mr	17	·40
2	S	10	·65	4	O	10	·18	5	N	8	·71	7	D	8	·24	**42**	1	Jr	6	·77		3	F	5	·30	4	Mr	6	·87
7	Au	31	·02	1	S	29	·55	3	O	29	·08	4	N	27○	·61		6	D	27●	·14	**43**	7	Jr	25	·67	2	F	24	·72
5	S	18	·92	7	O	18	·45	1	N	16●○	·98	3	D	16	·51	**44**	5	Jr	15	·04		6	F	13	·57	1	Mr	14	·10
3	S	7	·28	4	O	6	·81	6	N	5●○	·34	7	D	4	·87	**45**	2	Jr	3	·41		3	F	1	·94	5	Mr	3	·47
7	Au	27	·65	2	S	26	·18	3	O	25●	·71	5	N	24	·24		6	D	23	·77	**46**	1	Jr	22	·30	2	F	20	·83
6	S	15○	·55	1	O	15	·08	2	N	13	·61	4	D	13	·14	**47**	5	Jr	11	·67		7	F	10	·20	1	Mr	11○	·73
3	S	4○	·91	5	O	4	·45	6	N	2	·90	1	D	2	·51	**48**	3	Jr	1	·04		4	Jr	30	·57	6	F	29●○	·10
1	Au	24●○	·28	2	S	22	·81	5	N	20	·87	7	D	20	·40	**49**	1	Jr	18	·93		3	F	17●	·47	5	Mr	19	·00
				4	O	22	·34																						
7	S	12	·18	1	O	11	·71	3	N	10	·24	4	D	9	·77	**50**	6	Jr	8○	·30		7	F	o	·83	2	Mr	8	·36
4	S	1	·55	6	O	1	·08	7	O	30	·61	2	N	29	·14		3	D	28○	·67	**51**	5	Jr	27●	·20	6	F	25	·73
3	S	20	·44	4	O	19	·97	6	N	18	·51	1	D	18●○	·04	**52**	2	Jr	16	·57		4	F	15	·10	5	Mr	15	·63
7	S	8	·81	2	O	8	·34	3	N	6	·87	5	D	6	·40	**53**	6	Jr	4	·93		1	F	3	·46	3	Mr	4	·99
5	Au	29	·18	6	S	27	·71	1	O	27○	·24	2	N	25●	·77		4	D	25	·30	**54**	5	Jr	23	·83	7	F	22	·36
4	S	17	·08	5	O	16○	·61	7	N	15	·14	1	D	14	·67	**55**	3	Jr	13	·20		4	F	11	·73	6	Mr	13	·26
1	S	6	·44	2	O	5○	·90	4	N	4	·50	6	D	4	·03	**56**	7	Jr	2	·57		2	F	1	·10	3	Mr	1	·63
5	Au	25	·81	7	S	24	·34	1	O	23	·87	3	N	22	·40		4	D	21	·93	**57**	6	Jr	20	·46	7	F	18○	·99
4	S	13	·71	6	O	13	·24	7	N	11	·77	2	D	11	·30	**58**	3	Jr	9	·83		5	F	8○	·36	6	Mr	9	·89
2	S	3●	·07	3	O	2	·61	5	N	1	·14	6	N	30	·67		1	D	30	·20	**59**	2	Jr	28○	·73	4	F	27	·26
7	S	21	·97	2	O	21	·50	4	N	20	·03	5	D	19	·56	**60**	7	Jr	18●	·09		1	F	16	·62	3	Mr	17	·16
5	S	10	·34	6	O	9	·87	1	N	8	·40	2	D	7○	·93	**61**	4	Jr	6	·46		5	F	4	·99	7	Mr	6	·59
2	Au	30	·71	4	S	29	·24	5	O	28	·77	7	N	27○	·30		1	D	26	·83	**62**	3	Jr	25	·36	4	F	23	·89
1	S	18	·60	3	O	18	·13	4	N	16○	·67	6	D	16	·20	**63**	7	Jr	14	·73		2	F	13	·26	3	Mr	14	·79
5	S	7	·98	7	O	7	·50	2	N	6	·03	3	D	5	·56	**64**	5	Jr	4	·09		6	F	2	·62	1	Mr	3	·15
2	Au	27	·34	4	S	25○	·87	6	O	25	·40	7	N	23	·93		2	D	23	·46	**65**	3	Jr	21	·99	5	F	20	·52
2	S	15○	·24	3	O	14	·77	5	N	13	·30	6	D	12	·83	**66**	1	Jr	11	·36		2	F	9	·89	4	Mr	11○	·42

TABLE X—

⊙'s Anom col. 6 + 29·53059 + 59·06117 + 88·59176 + 118·12235

☾'s Anom col. 7 + 1·976 + 3·952 + 5·928 + 7·904

Kaliyuga.	Vikrama Era.	Saka Era	Commencement of Solar Year. Month and day A.D.	Fraction of day	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
3767	723	588	20M	·3021	20·64934	15·871	**666**	5	5	Ap	9	·95	7	My	9	·48	2	Je	8	·01	3	Jl	7	·54	5	Au	6	·07
3768	724	589	20M	·5608	9·75779	12·029	**667**	6	3	Mr	30	·32	4	Ap	28	·85	6	My	28	·38	7	Je	26	·91	2	Jl	26	·44
3769	725	590	19M	·8194	28·39681	10·163	**668**	7	2	Ap	17	·21	3	My	16	·75	5	Je	15	·28	6	Jl	14○	·81	1	Au	13	·34
3770	726	591	20M	·0781	17·50524	6·320	**669**	2	6	Ap	6	·58	1	My	6	·11	2	Je	4	·64	4	Jl	4○	·17	5	Au	2	·70
3771	727	592	20M	·3368	6·61368	2·478	**670**	3	3	Mr	26	·95	5	Ap	5	·48	7	My	25	·01	1	Je	23●○	·54	4	Au	21	·60
																					3	Jl	23	·07				
3772	728	593	20M	·5955	25·25280	0·612	**671**	4	2	Ap	14	·85	4	My	14	·38	5	Je	12	·91	7	Jl	12	·44	1	Au	10	·97
3773	729	594	19M	·8542	14·36113	24·324	**672**	5	7	Ap	3	·21	1	My	2○	·74	3	Je	1●	·27	4	Je	30	·81	6	Jl	30	·34
3774	730	595	20M	·1128	3·46957	20·483	**673**	7	4	Mr	23	·58	6	Ap	22○	·11	7	My	21	·64	3	Jl	19	·70	5	Au	18	·22
																	2	Je	20	·17								
3775	731	596	20M	·3715	22·10860	18·616	**674**	1	3	Ap	11●	·48	5	My	11	·01	6	Je	9	·54	1	Jl	9	·07	2	Au	7	·60
3776	732	597	20M	·6302	11·21703	14·773	**675**	2	7	Mr	31	·85	2	Ap	30	·38	3	My	29	·91	5	Je	28	·44	6	Jl	27	·97
3777	733	598	19M	·8889	0·32546	10·931	**676**	3	5	Mr	20	·21	1	My	18	·27	2	Je	16	·80	4	Jl	16	.33	6	Au	14○	·87
									6	Ap	18	·74																
3778	734	599	20M	·1476	18·96449	9·065	**677**	5	4	Ap	8	·11	5	My	7	·64	7	Je	6	·17	1	Jl	5	·70	3	Au	4○	·23
3779	735	600	20M	·4062	8·07292	5·223	**678**	6	1	Mr	28	·48	3	Ap	27	·01	4	My	26	·54	6	Je	25	·07	7	Jl	24●	·60
																									2	Au	23	·13
3780	736	601	20M	·6649	26·71195	3·356	**679**	7	7	Ap	16	·37	1	My	15	·91	3	Je	14○	·44	4	Jl	13●	·97	6	Au	12	·50
3781	737	602	19M	·9236	15·82039	27·069	**680**	1	4	Ap	4	·74	6	My	4	·27	7	Je	2○	·80	2	Jl	2	·33	3	Jl	31	·86
3782	738	603	20M	·1823	4·92882	23·226	**681**	3	2	Mr	25	·11	3	Ap	23	·64	5	My	23●	·17	1	Jl	21	·23	2	Au	19	·76
																	6	Je	21	·70								
3783	739	604	20M	·4410	23·56784	21·360	**682**	4	1	Ap	13	·01	2	My	12●	·54	4	Je	11	·07	5	Jl	10	·60	7	Au	9	·13
3784	740	605	20M	·6996	12·67628	17·518	**683**	5	5	Ap	2○	·37	6	My	1	·90	1	My	31	·43	2	Je	29	·97	4	Jl	29	·50
3785	741	606	19M	·9583	1·78471	13·676	**684**	6	2	Mr	21○	·74	4	Ap	20	·27	7	Je	18	·33	1	Jl	17	·86	3	Au	16	·39
													5	My	19	·80												
3786	742	607	20M	·2170	20·42374	11·809	**685**	1	1	Ap	9	·64	3	My	9	·17	4	Je	7	·70	6	Jl	7	·23	7	Au	5	·76
3787	743	608	20M	·4757	9·53218	7·967	**686**	2	6	Mr	30	·01	7	Ap	28	·54	2	My	28	·07	3	Je	26	·60	5	Jl	26○	·13
3788	744	609	20M	·7344	28·17119	6·101	**687**	3	4	Ap	17	·90	6	My	17	·43	7	Je	15	·96	2	Jl	15○	·49	4	Au	14	·03
3789	745	610	19M	·9930	17·27963	2·259	**688**	4	2	Ap	6	·27	3	My	5	·80	5	Je	4	·33	6	Jl	3●○	·86	1	Au	2	·39
3790	746	611	20M	·2517	6·38807	25·971	**689**	6	6	Mr	26	·64	1	Ap	25	·17	2	My	24	·70	4	Je	23	·23	7	Au	21	·29
																					5	Jl	22	·76				
3791	747	612	20M	·5104	25·02709	24·105	**690**	7	5	Ap	14	·53	7	My	14○	·07	1	Je	12	·60	3	Jl	12	·13	4	Au	10	·66
3792	748	613	20M	·7691	14·13553	20·262	**691**	1	2	Ap	3	·90	4	My	3○	·43	5	Je	1	·96	7	Jl	1	·49	2	Jl	31	·02
3793	749	614	20M	·0278	3·24397	16·420	**692**	2	7	Mr	23	·27	1	Ap	21●	·80	3	My	21	·33	6	Jl	19	·39	7	Au	17	·92
																	4	Je	19	·86								
3794	750	615	20M	·2864	21·88298	14·554	**693**	4	6	Ap	11●	·17	7	My	10	·70	2	Je	9	·23	3	Jl	8	·76	5	Au	7	·29
3795	751	616	20M	·5451	10·99142	10·712	**694**	5	3	Mr	31	·53	5	Ap	30	·06	6	My	29	·59	1	Je	28	·13	2	Jl	27	·66
3796	752	617	20M	·8038	0·09985	6·869	**695**	6	2	Ap	19	·43	3	My	18	·96	5	Je	17	·49	7	Jl	17	·02	1	Au	15○	·55
3797	753	618	20M	·0625	18·73888	5·003	**696**	7	6	Ap	7	·80	1	My	7	·33	2	Je	5	·86	4	Jl	5	·39	5	Au	3	·92
3798	754	619	20M	·3212	7·84732	1·161	**697**	2	4	Mr	28	·17	5	Ap	26	·70	7	My	26	·23	1	Je	24○	·76	4	Au	22	·82
																					3	Jl	24	·29				
3799	755	620	20M	·5798	26·48634	26·849	**698**	3	3	Ap	16	·06	4	My	15	·59	6	Je	14○	·12	7	Jl	13	·65	2	Au	12	·19
3800	756	621	20M	·8385	15·59477	23·007	**699**	4	7	Ap	5	·43	1	My	4	·96	3	Je	3○	·49	5	Jl	3	·02	6	Au	1	·55
3801	757	622	20M	·0972	4·70321	19·164	**700**	5	4	Mr	24	·80	6	Ap	23	·33	7	My	22●	·86	3	Jl	20	·92	5	Au	19	·45
																	2	Je	21	·39								
3802	758	623	20M	·3559	23·34224	17·288	**701**	1	3	Ap	12○	·70	5	My	12	·23	6	Je	10	·76	1	Jl	10	·29	2	Au	8	·82
3803	759	624	20M	·6146	12·45066	13·456	**702**	1	1	Ap	2●○	·07	2	My	1	·60	4	My	31	·13	5	Je	29	·66	7	Jl	29	·19
3804	760	625	20M	·8733	1·55910	9·614	**703**	2	5	Mr	22●	·43	6	Ap	20	·97	3	Je	19	·03	4	Jl	18	·56	6	Au	17	·09
													1	My	20	·50												

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	4○	·60	1	O	4	·13	2	N	2	·66	4	D	2	·19		5	D	31	·73	67	7	Jr	30	·26	1	F	28	·79
4	Au	24●	·97	5	S	23	·50	1	N	21	·56	3	D	21	·09	68	4	Jr	49○	·62		6	F	18	·15	7	Mr	18	·68
				7	O	23	·03																						
2	S	11	·87	4	O	11	·40	6	N	9	·93	7	D	9	·46	69	2	Jr	8○	·09		3	F	6	·52	5	Mr	8	·05
7	S	1	·23	1	S	30	·77	3	O	30	·30	4	N	28	·83		6	D	28○	·36	70	7	Jr	26	·89	2	F	25	·42
6	S	20	·13	7	O	19	·66	2	N	18	·19	3	D	17●	·72	71	5	Jr	16	·25		6	F	14	·79	1	Mr	16	·32
3	S	9	·50	5	O	9	·03	6	N	7○	·56	1	D	7●	·09	72	2	Jr	5	·62		4	F	4	·15	5	Mr	4	·68
7	Au	28	·87	2	S	27	·40	3	O	26○	·93	5	N	25●	·46		6	D	24	·99	73	1	Jr	23	·52	3	F	22	·05
6	S	16	·76	1	O	16○	·29	2	N	14	·83	4	D	14	·36	74	5	Jr	12	·89		7	F	11	·42	1	Mr	12	·95
4	S	6	·13	5	O	5●	·66	7	N	4	·19	1	D	3	·72	75	3	Jr	2	·25		4	Jr	31	·78	6	Mr	2○	·31
1	Au	26○	·50	3	S	25	·03	4	O	24	·56	6	N	23	·09		7	D	22	·62	76	2	Jr	21	·15	3	F	19○	·68
7	S	13	·40	1	O	12	·93	3	N	11	·46	4	D	10	·99	77	6	Jr	9	·52		1	F	8○	·05	2	Mr	9	·58
4	S	2	·76	6	O	2	·29	7	O	31	·82	2	N	30	·35		3	D	29	·89	78	5	Jr	28●	·42	6	F	26	·95
3	S	21	·66	5	O	21	·19	6	N	19	·72	1	D	19○	·25	79	2	Jr	17	·78		4	F	16	·31	5	Mr	17	·85
1	S	11	·03	2	O	10	·56	4	N	9	·09	5	D	8○	·62	80	7	Jr	7	·15		1	F	5	·68	3	Mr	6	·21
5	Au	30	·39	6	S	28	·93	1	O	28	·46	2	N	26●○	·99		4	D	26	·52	81	6	Jr	25	·05	7	F	23	·58
4	S	18	·29	5	O	17	·82	7	N	16●	·35	1	D	15	·88	82	3	Jr	14	·41		4	F	12	·95	6	Mr	14	·48
1	S	7	·66	3	O	7○	·19	4	N	5●	·72	6	D	5	·25	83	7	Jr	3	·78		2	F	2	·31	3	Mr	3	·84
6	Au	28	·03	7	S	26○	·56	2	O	26	·09	3	N	24	·62		5	D	24	·15	84	6	Jr	22	·68	1	F	21	·21
4	S	14○	·92	6	O	14	·45	7	N	12	·99	2	D	12	·52	85	4	Jr	11	·05		5	F	9	·58	7	Mr	11	·11
2	S	4	·29	3	O	3	·82	5	N	2	·35	6	D	1	·88		1	D	31	·41	86	2	Jr	29○	·94	4	F	28●	·47
6	Au	24	·68	1	S	23	·19	4	N	21	·25	5	D	20	·78	87	7	Jr	19○	·31		1	F	17	·84	3	Mr	19	·37
				2	O	22	·72																						
5	S	12	·56	7	O	12	·09	1	N	10	.62	3	D	10	·15	88	4	Jr	8○	·68		6	F	7	·21	7	Mr	7	·74
2	Au	31	·92	4	S	30	·45	5	O	29	·98	7	N	28	·51		2	D	28	·05	89	3	Jr	26	·58	5	F	25	·11
1	S	19	·82	3	O	19	·35	4	N	17○	·88	6	D	17	·41	90	7	Jr	15	·94		2	F	14	·47	4	Mr	16	·00
6	S	9	·19	7	O	8	·72	2	N	7○	·75	3	D	6	·78	91	5	Jr	5	·31		6	F	3	·84	1	Mr	5	·37
3	Au	29	·55	5	S	28	·09	6	O	27○	·62	1	N	26	·15		2	D	25	·68	92	4	Jr	24	·21	5	F	22	·74
2	S	16	·45	4	O	15	·98	5	N	14	·51	7	D	14	·04	93	1	Jr	12	·57		3	F	11	·11	4	Mr	12○	·64
6	S	5○	·82	1	O	5●	·35	2	N	3	·88	4	D	3	·41	94	5	Jr	1	·94		7	Jr	31	·47	2	Mr	2○	·00
4	Au	26○	·19	5	S	24	·72	7	O	24	·25	1	N	22	·78		3	D	22	·31	95	4	Jr	20	·84	6	F	19●○	·37
																										7	Mr	20	·90
3	S	14	·80	4	O	13	·61	6	N	12	·15	7	D	11	·68	96	2	Jr	10	·21		3	F	8	·74	5	Mr	9	·27
7	S	2	·45	1	O	1	·98	3	O	31	·51	5	N	30	·04		6	D	29○	·57	97	1	Jr	28●	·10	2	F	26	·63
6	S	21	·35	7	O	20	·88	2	N	19	·41	3	D	18○	·94	98	5	Jr	17	·47		7	F	16	·00	1	Mr	17	·53
3	S	10	·72	5	O	10	·25	6	N	8	·78	1	D	8●○	·31	99	2	Jr	6	·84		4	F	5	·37	5	Mr	6	·90
1	Au	31	·08	2	S	29	·61	4	O	29	·14	5	N	27●	·67		7	D	27	·21	700	1	Jr	25	·74	3	F	24	·27
6	S	17	·98	1	O	17○	·51	3	N	16	·04	4	D	15	·57	01	6	Jr	14	·11		7	F	12	·64	2	Mr	14	·17
4	S	7	·35	5	O	6○	·88	7	N	5	·41	1	D	4	·94	02	3	Jr	3	·47		5	F	2	·01	6	Mr	3	·54
1	Au	27	·72	3	S	26●○	·25	4	O	25	·78	6	N	24	·31		7	D	23	·84	03	2	Jr	22	·37	3	F	20	·90
7	S	15	·62	2	O	15	·15	3	N	13	·68	5	D	13	·21	04	6	Jr	11	·84		1	F	10○	·27	2	Mr	10	·80

									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3805	761	626	20M	·1319	20·19813	7·747	**704**	3	4	Ap	9	·33	5	My	8	·86	7	Je	7	·39	1	Jl	6	·92	3	Au	5○	·45
3806	762	627	20M	·3906	9·30656	3·905	**705**	5	1	Mr	29	·70	3	Ap	28	·23	4	My	27	·76	6	Je	26	·29	7	Jl	25●○	·82
3807	763	628	20M	·6493	27·94559	2·039	**706**	6	7	Ap	17	·60	2	My	17	·13	3	Je	15	·66	5	Jl	15○	·19	6	Au	13	·72
3808	764	629	20M	·9080	17·05403	25·751	**707**	7	4	Ap	6	·96	6	My	6	·49	1	Je	5	·03	3	Jl	4●	·56	4	Au	3	·09
3809	765	630	20M	·1667	6·16245	21·909	[illegible]	1	2	Mr	26	·33	3	Ap	24	·86	5	My	24○	·39	{ 6	Je	22	·92	2	Au	20	·98
																					{ 1	Jl	22	·45				
3810	766	631	20M	·4253	24·80148	20·04	[illegible]	3	1	Ap	14	·23	2	My	13●○	·76	4	Je	12	·29	5	Jl	11	·82	7	Au	10	·35
3811	767	632	20M	·6840	13·90992	16·20	[illegible]	4	5	Ap	3	·60	7	My	3○	·13	1	Je	1	·66	3	Jl	1	·19	4	Jl	30	·74
3812	768	633	20M	·9427	3·019835	12·358	**711**	5	2	Mr	23○	·96	4	Ap	22	·49	{ 6	My	22	·02	2	Jl	20	·09	3	Au	18	·62
																	{ 7	Je	20	·55								
3813	769	634	20M	·2014	21·65738	10·492	**712**	6	1	Ap	10	·86	3	My	10	·39	4	Je	8	·92	6	Jl	8	·45	7	Au	6	·98
3814	770	635	20M	·4601	10·76581	6·650	**713**	1	6	Mr	31	·23	7	Ap	29	·76	2	My	29	·29	3	Je	27	·82	5	Jl	27	·35
3815	771	636	20M	·7187	29·40483	4·784	**714**	2	5	Ap	19	·13	6	My	18	·66	1	Je	17	·19	2	Jl	16	·72	4	Au	15●	·25
3816	772	637	20M	·9774	18·51327	0·941	**715**	3	2	Ap	8	·49	4	My	8	·02	5	Je	6	·55	7	Jl	6○	·08	1	Au	4●	·61
3817	773	638	20M	·2361	7·62171	24·653	**716**	4	6	Mr	27	·86	1	Ap	26	·39	2	My	25	·92	{ 4	Je	24○	·45	7	Au	22	·51
																					{ 5	Jl	23●	·98				
3818	774	639	20M	·4948	26·26073	22·788	**717**	6	5	Ap	15	·76	7	My	15	·28	1	Je	13○	·82	3	Jl	13	·35	4	Au	11	·88
3819	775	640	20M	·7535	15·36907	18·945	**718**	7	3	Ap	5	·12	4	My	4	·65	6	Je	3	·19	7	Jl	2	·72	2	Au	1	·25
3820	776	641	21M	·0121	4·47760	15·103	**719**	1	7	Mr	25	·49	2	Ap	24○	·02	{ 3	My	23●	·55	6	Jl	21	·61	1	Au	20	·14
																	{ 5	Je	22	·08								
3821	777	642	20M	·2708	23·11662	13·237	**720**	2	6	Ap	12○	·39	7	My	11	·92	2	Je	10	·45	3	Jl	9	·98	5	Au	8	·51
3822	778	643	20M	·5295	12·22506	9·394	**721**	4	3	Ap	1	·76	5	My	1	·29	6	My	30	·82	1	Je	29	·35	2	Jl	28	·88
3823	779	644	20M	·7882	1·33350	5·552	**722**	5	{ 1	Mr	22	·12	4	My	20	·18	5	Je	18	·71	7	Jl	18	·25	1	Au	16○	·78
									{ 2	Ap	20	·65																
3824	780	645	21M	·0469	19·97251	3·686	**723**	6	7	Ap	10	·02	1	My	9	·55	3	Je	8	·08	4	Jl	7	·61	6	Au	6○	·14
3825	781	646	20M	·3055	9·08095	27·398	**724**	7	4	Mr	29	·39	5	Ap	27	·92	7	My	27	·45	1	Je	25	·98	{ 3	Jl	25●○	·51
																									{ 5	Au	24	·04
3826	782	647	20M	·5642	27·71998	25·532	**725**	2	3	Ap	17	·29	4	My	16	·82	6	Je	15	·35	7	Jl	14●	·88	2	Au	13	·41
3827	783	648	20M	·8229	16·82841	21·690	**726**	3	7	Ap	6	·65	2	My	6	·18	3	Je	4○	·71	5	Jl	4●	·24	6	Au	2	·77
3828	784	649	21M	·0816	5·93685	17·847	**727**	4	5	Mr	27	·02	6	Ap	25	·55	1	My	25●○	·08	{ 2	Je	23	·61	5	Au	21	·67
																					{ 4	Jl	23	·14				
3829	785	650	20M	·3493	24·57588	15·981	**728**	5	3	Ap	13	·92	5	My	13○	·45	6	Je	11	·98	1	Jl	11	·51	3	Au	10	·04
3830	786	651	20M	·5220	13·68430	12·159	**729**	7	1	Ap	3○	·28	2	My	2	·81	4	Je	1	·35	5	Je	30	·88	7	Jl	30	·41
3831	787	652	20M	·8576	2·79274	8·296	**730**	1	5	Mr	23○	·65	{ 7	Ap	22	·18	3	Je	20	·24	4	Jl	19	·77	6	Au	18	·30
													{ 1	My	21	·71												
3832	788	653	21M	·1163	21·43177	6·430	**731**	2	4	Ap	11	·55	6	My	11	·08	7	Je	9	·61	2	Jl	9	·14	3	Au	7	·67
3833	789	654	20M	·3749	10·54020	2·588	**732**	3	1	Mr	30	·92	3	Ap	29	·45	4	My	28	·98	6	Je	27	·51	1	Jl	27	·04
3834	790	655	20M	·6337	29·17923	0·722	**733**	5	7	Ap	18	·81	2	My	18	·34	3	Je	16	·87	5	Jl	16○	·41	6	Au	14●	·94
3835	791	656	20M	·8924	18·28767	24·434	**734**	6	5	Ap	8	·18	6	My	7	·71	1	Je	6	·24	2	Jl	5○	·77	4	Au	4	·30
3836	792	657	21M	·1510	7·39609	20·592	**735**	7	2	Mr	28	·55	4	Ap	27	·08	5	My	26	·61	{ 7	Je	25●○	·14	3	Au	23	·20
																					{ 1	Jl	24	·67				
3837	793	658	20M	·4097	26·03512	18·725	**736**	1	1	Ap	15	·45	2	My	14	·98	4	Je	13	·51	6	Jl	13	·04	7	Au	11	·57
3838	794	659	20M	·6684	15·14356	14·883	**737**	3	5	Ap	4	·81	7	My	4○	·34	1	Je	2	·87	3	Jl	2	·40	4	Jl	31	·94
3839	795	660	20M	·9271	4·25229	11·042	**738**	4	3	Mr	25	·18	4	Ap	23○	·71	{ 6	My	23	·24	2	Jl	21	·30	3	Au	19	·83
																	{ 7	Je	21	·77								
3840	796	661	21M	·1858	22·89101	9·175	**739**	5	2	Ap	13	·08	3	My	12	·61	5	Je	11	·14	7	Jl	10	·67	1	Au	9	·20
3841	797	662	20M	·4444	11·99945	5·333	**740**	6	6	Ap	1●	·44	7	Ap	30	·97	2	My	30	·51	4	Je	29	·04	5	Jl	28	·57
3842	798	663	20M	·7031	1·10788	1·490	**741**	1	{ 3	Mr	21	·81	6	My	19	·87	1	Je	18	·41	2	Jl	17	·93	4	Au	16○	·46
									{ 5	Ap	20	·34																
3843	799	664	20M	·9618	19·74691	27·179	**742**	2	2	Ap	9	·71	4	My	9	·24	5	Je	7	·77	7	Jl	7	·30	1	Au	5●○	·83

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Ârya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65298				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	3●	·99	6	O	3	·52	1	N	2	·05	2	D	1	·58		4	D	31	·11	**05**	5	Jr	29ↄ	·64	7	F	28●	·17
{2	Au	24	·35	5	O	22	·42	6	N	20	·94	1	D	20	·47	**06**	3	Jr	19●○	·01		4	F	17	·54	6	Mr	19	·07
{3	S	22	·88																										
1	S	12	·25	2	O	11	·78	4	N	10	·31	5	D	9	·84	**07**	7	Jr	8	·37		1	F	6	·90	3	Mr	8	·43
5	S	1	·62	7	O	1	·15	1	O	30	·68	3	N	29ↄ	·21		4	D	28●	·74	**08**	6	Jr	27	·27	7	F	25	·80
4	S	19	·51	6	O	19	·05	7	N	17○	·58	2	D	17	·11	**09**	3	Jr	15	·64		5	F	14	·17	6	Mr	15	·70
1	S	8	·88	3	O	8	·41	4	N	6ↄ	·94	6	D	6	·47	**10**	1	Jr	5	·00		2	F	3	·53	4	Mr	5	·07
6	Au	29	·25	7	S	27	·78	2	O	27●	·31	3	N	25	·84		5	D	25	·37	**11**	6	Jr	23	·90	1	F	22	·43
5	S	17	·15	6	O	16	·68	1	N	15	·21	2	D	14	·74	**12**	4	Jr	13	·27		5	F	11	·80	7	Mr	12○	·33
2	S	5○	·52	4	O	5●	·04	5	N	3	·57	7	D	3	·11	**13**	1	Jr	1	·64		3	Jr	31	·17	4	Mr	1○	·70
6	Au	25○	·88	1	S	24	·41	2	O	23	·94	4	N	22	·47		6	D	22	·00	**14**	7	Jr	20	·53	{2	F	19●	·06
																										{3	Mr	20	·59
5	S	13	·78	7	O	13	·31	1	N	11	·84	3	D	11	·37	**15**	4	Jr	9ↄ	·90		6	F	8	·43	7	Mr	9	·96
3	S	3	·15	4	O	2	·68	6	N	1	·21	7	N	30	·74		2	D	30ↄ	·27	**16**	3	Jr	28	·80	5	F	27	·33
2	S	21	·04	3	O	20	·57	5	N	19	·10	6	D	18○	·63	**17**	1	Jr	17	·17		2	F	15	·70	4	Mr	17	·23
6	S	10	·41	7	O	9	·94	2	N	8	·47	4	D	8	·00	**18**	5	Jr	6	·53		7	F	5	·06	1	Mr	6	·59
3	Au	30	·78	5	S	29	·31	6	O	28ↄ	·84	1	N	27	·37		2	D	26	·90	**19**	4	Jr	25	·43	5	F	23	·96
3	S	18	·67	4	O	18○	·21	5	N	16	·74	7	D	16	·27	**20**	1	Jr	14	·80		3	F	13	·33	4	Mr	13	·86
7	S	7	·04	1	O	6ↄ	·57	3	N	5	·10	4	D	4	·63	**21**	6	Jr	3	·16		7	F	1	·69	2	Mr	3	·23
4	Au	27	·41	5	S	25●	·94	7	O	25	·47	2	N	24	·00		3	D	23	·53	**22**	5	Jr	22	·06	6	F	20○	·59
3	S	15	·31	4	O	14	·84	6	N	13	·37	7	D	12	·90	**23**	2	Jr	11	·43		3	F	9ↄ	·96	5	Mr	11	·49
7	S	:4	·67	2	O	4	·20	3	N	2	·73	5	D	2	·27		6	D	31	·80	**24**	1	Jr	30ↄ	·33	2	F	28	·86
6	S	22	·57	1	O	22	·10	2	N	20	·63	4	D	20	·16	**25**	5	Jr	18●	·69		7	F	17	·22	1	Mr	18	·75
3	S	11	·94	5	O	11	·47	7	N	10	·00	1	D	9ↄ	·53	**26**	3	Jr	8●	·06		4	F	6	·59	6	Mr	8	·12
1	S	1	·31	2	S	30	·84	4	O	30	·37	5	N	28ↄ	·90		7	D	28●	·43	**27**	1	Jr	26	·96	3	F	25	·49
7	S	20	·20	1	O	19	·73	3	N	18○	·26	4	D	17	·79	**28**	6	Jr	16	·33		7	F	14	·86	2	Mr	15	·39
4	S	8	·57	6	O	8	·10	7	N	6●	·63	2	D	6	·16	**29**	3	Jr	4	·69		5	F	3	·22	6	Mr	4	·75
1	Au	28	·94	3	S	27	·47	5	O	27●	·00	6	N	25	·53		1	D	25	·06	**30**	2	Jr	23	·59	4	F	22	·12
7	S	16ↄ	·83	2	O	16	·37	3	N	14	·90	5	D	14	·43	**31**	6	Jr	12	·96		1	F	11	·49	3	Mr	13○	·02
5	S	6○	·20	6	O	5	·73	1	N	4	·26	2	D	3	·79	**32**	4	Jr	2	·32		5	Jr	31	·85	7	Mr	1	·39
2	Au	25●	·57	4	S	24	·10	5	O	23	·63	7	N	22	·16		1	D	21	·69	**33**	3	Jr	20ↄ	·22	{4	F	18	·75
																										{6	Mr	20	·28
1	S	13	·47	3	O	13	·00	4	N	11	·53	6	D	11	·06	**34**	7	Jr	9ↄ	·59		2	F	8	·12	3	Mr	9	·65
5	S	2	·33	7	O	2	·36	1	O	31	·89	3	N	30	·43		4	D	29●ↄ	·96	**35**	6	Jr	28	·49	1	F	27	·02
4	S	21	·73	6	O	21	·26	7	N	19	·79	2	D	19●	·33	**36**	3	Jr	17	·85		5	F	16	·38	6	Mr	16	·91
2	S	10	·10	3	O	9	·63	5	N	8○	·15	6	D	7	·69	**37**	1	Jr	6	·22		2	F	4	·75	4	Mr	6	·28
6	Au	30	·47	1	S	29	·00	2	O	28●ↄ	·53	4	N	27	·06		5	D	26	·59	**38**	7	Jr	25	·12	1	F	23	·65
5	S	18	·36	6	O	17○	·89	1	N	16	·42	2	D	15	·95	**39**	4	Jr	14	·49		6	F	13	·02	7	Mr	14	·55
2	S	7	·73	4	O	7	·26	5	N	5	·79	7	D	5	·32	**40**	1	Jr	3	·85		3	F	2	·38	4	Mr	2ↄ	·91
7	Au	27○	·10	1	S	25	·63	3	O	25	·16	4	N	23	·69		6	D	23	·22	**41**	7	Jr	21	·75	2	F	20ↄ	·28
5	S	14	·99	7	O	14	·53	2	N	13	·06	3	D	12	·59	**42**	5	Jr	11	·12		6	F	9○	·65	1	Mr	11	·18
3	S	4	·86	4	O	3	·89	6	N	2	·42	7	D	1	·95		2	D	31	·48	**43**	4	Jr	30	·01	5	F	28	·55

TABLE X—

⊙'s Anom col. 6 | + 29·53059 | + 59·06117 | + 88·59176 | + 118·12235

☾'s Anom col. 7 | + 1·976 | + 3·952 | + 5·928 | + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month	Ashada Day	Ashada Fraction	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
3844	800	665	21M	·2205	8·85525	23·337	**743**	3	7	Mr	30	·08	1	Ap	28	·61	3	My	28	·14	4	Je	26	·67	6	Jl	26	·20
																									7	Au	24	·73
3845	801	666	20M	·4792	27·49437	21·470	**744**	4	5	Ap	16	·97	7	My	16	·50	2	Je	15○	·03	3	Jl	14	·57	5	Au	13	·10
3846	802	667	20M	·7378	16·60280	17·629	**745**	6	3	Ap	6	·84	3	My	5	·87	6	Je	4○	·40	7	Jl	3	·93	2	Au	2	·46
3847	803	668	20M	·9995	5·71124	13·786	**746**	7	7	Mr	26	·71	2	Ap	25	·24	3	My	24●○	·77	5	Je	23	·30	1	Au	21	·36
																					6	Jl	22	·83				
3848	804	669	21M	·2552	24·35026	11·920	**747**	1	6	Ap	14○	·61	1	My	14●	·14	2	Je	12	·67	4	Jl	12	·20	5	Au	10	·73
3849	805	670	20M	·5132	13·45870	8·077	**748**	2	3	Ap	2○	·97	5	My	2	·50	7	Je	1	·03	1	Je	30	·56	3	Jl	30	·09
3850	806	671	20M	·7726	2·56714	4·235	**749**	4	1	Mr	23●○	·21	2	Ap	21	·17	5	Je	19	·93	7	Jl	19	·46	1	Au	17	·99
													4	My	21	·46												
3851	807	672	21M	·0312	21·20615	2·369	**750**	5	7	Ap	11	·24	1	My	10	·77	3	Je	9	·30	4	Jl	8	·83	6	Au	7	·36
3852	808	673	21M	·2899	10·31459	26·081	**751**	6	4	Mr	31	·60	6	Ap	30	·13	7	My	29	·67	2	Je	28	·20	3	Jl	27○	·73
3853	809	674	20M	·5486	28·95362	24·215	**752**	7	3	Ap	18	·50	5	My	18	·03	6	Je	16	·56	1	Jl	16○	·09	2	Au	14	·62
3854	810	675	20M	·8073	18·06205	20·373	**753**	2	7	Ap	7	·87	2	My	7	·40	3	Je	5	·93	5	Jl	5○	·46	6	Au	3	·99
3855	811	676	21M	·0660	7·17049	16·530	**754**	3	5	Mr	28	·24	6	Ap	26	·77	1	My	26	·30	2	Je	24●	·83	5	Au	22	·89
																					4	Jl	24	·36				
3856	812	677	21M	·3246	25·80951	14·664	**755**	4	4	Ap	16	·13	5	My	15○	·66	7	Je	14	·19	1	Jl	13	·73	3	Au	12	·26
3857	813	678	20M	·5833	14·91795	10·822	**756**	5	1	Ap	4	·50	3	My	4○	·03	4	Je	2	·56	6	Jl	2	·09	7	Jl	31	·62
3858	814	679	20M	·3420	4·02638	6·980	**757**	7	5	Mr	24	·87	7	Ap	23●○	·40	1	My	22	·93	4	Jl	20	·99	6	Au	19	·52
																	3	Je	21	·44								
3859	815	680	21M	·1007	22·66534	5·113	**758**	1	4	Ap	12	·77	6	My	12	·30	7	Je	10	·83	2	Jl	10	·36	3	Au	8	·89
3860	816	681	21M	·3594	11·77445	1·272	**759**	2	2	Ap	2●	·13	3	My	1	·66	5	My	31	·19	6	Je	29	·72	1	Jl	29	·25
3861	817	682	20M	·6180	0·88228	24·983	**760**	3	6	Mr	21	·50	2	My	19	·56	4	Je	18	·09	5	Jl	17	·62	7	Au	16○	·15
									1	Ap	20	·03																
3862	818	683	20M	·8767	19·52131	23·117	**761**	5	5	Ap	9	·40	6	My	8	·93	1	Je	7	·46	2	Jl	6	·99	4	Au	5●	·52
3863	819	684	21M	·1354	8·62974	19·275	**762**	6	2	Mr	29	·77	4	Ap	28	·30	5	My	27	·83	7	Je	26○	·36	1	Jl	25	·89
																									3	Au	24	·42
3864	820	685	21M	·3941	27·26876	17·409	**763**	7	1	Ap	17	·67	3	My	17	·20	4	Je	15○	·73	6	Jl	15	·26	7	Au	13	·79
3865	821	686	20M	·6528	16·37720	13·566	**764**	1	6	Ap	6	·03	7	My	5	·56	2	Je	4●○	·09	3	Jl	3	·62	5	Au	2	·15
3866	822	687	20M	·9114	5·48564	9·724	**765**	3	3	Mr	26	·40	4	Ap	24○	·93	6	My	24	·46	7	Je	22	·99	4	Au	21	·05
																					2	Jl	22	·52				
3867	823	688	21M	·1701	24·12465	7·858	**766**	4	2	Ap	14○	·30	3	My	13	·83	5	Je	12	·36	6	Jl	11	·89	1	Au	10	·42
3868	824	689	21M	·3288	13·23310	4·016	**767**	5	6	Ap	3●○	·66	1	My	3	·19	2	Je	1	·73	4	Jl	1	·26	5	Jl	30	·79
3869	825	690	20M	·6875	2·34153	0·173	**768**	6	4	Mr	23●	·03	6	Ap	21	·56	1	Je	19	·62	3	Jl	19	·15	4	Au	17	·68
													7	My	21	·09												
3870	826	691	20M	·9362	20·98055	25·862	**769**	1	2	Ap	10	·93	4	My	10	·46	5	Je	8	·99	7	Jl	8	·52	2	Au	7○	·05
3871	827	692	21M	·2049	10·08899	22·019	**770**	2	7	Mr	31	·30	1	Ap	29	·83	3	My	29	·36	4	Je	27	·89	2	Jl	27○	·42
3872	828	693	21M	·4635	28·72811	20·153	**771**	3	6	Ap	19	·19	7	My	18	·72	2	Je	17	·25	3	Jl	16○	·79	5	Au	15	·32
3873	829	694	20M	·7222	17·83644	16·311	**772**	4	3	Ap	7	·56	5	My	7	·09	6	Je	5	·62	1	Jl	5●	·15	2	Au	3	·68
3874	830	695	20M	·9809	6·94488	12·489	**773**	6	7	Mr	27	·93	2	Ap	26	·46	3	My	25○	·99	5	Je	24	·52	1	Au	22	·58
																					7	Jl	24	·05				
3875	831	696	21M	·2396	25·58391	10·602	**774**	7	6	Ap	15	·83	1	My	15○	·36	2	Je	13	·89	4	Jl	13	·42	5	Au	11	·95
3876	832	697	21M	·4983	14·69234	6·760	**775**	1	4	Ap	5	·19	5	My	4●○	·72	7	Je	3	·25	1	Jl	2	·78	3	Au	1	·31
3877	833	698	20M	·7569	3·80077	2·912	**776**	2	1	Mr	24○	·56	3	Ap	23	·09	4	My	22	·62	7	Jl	20	·68	2	Au	19	·21
																	6	Je	21	·15								
3878	834	699	21M	·0156	22·43980	1·052	**777**	4	7	Ap	12	·46	1	My	11	·99	3	Je	10	·52	5	Jl	10	·05	6	Au	8	·58
3879	835	700	21M	·2743	11·54823	24·764	**778**	5	4	Ap	1	·82	6	My	1	·35	7	My	30	·88	2	Je	29	·42	3	Jl	28	·95
3880	836	701	21M	·5330	0·65667	20·922	**779**	6	2	Mr	22	·19	5	My	20	·25	6	Je	18	·78	1	Jl	18	·31	2	Au	16●	·84
									3	Ap	20	·72																
3881	837	702	20M	·7917	19·29570	19·055	**780**	1	1	Ap	9	·09	2	My	8	·62	4	Je	7	·15	5	Jl	6○	·68	7	Au	5●	·21
3882	838	703	21M	·0503	8·40413	15·213	**781**	2	5	Mr	29	·46	6	Ap	27	·99	1	My	27	·52	3	Je	26●○	·05	4	Jl	25	·58
																									6	Au	24	·11
3883	839	704	21M	·3090	27·04315	13·347	**782**	3	4	Ap	17	·35	5	My	16	·88	7	Je	15○	·41	1	Jl	14	·95	3	Au	13	·48

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	A.D.	Week-day	Month	Day	Fraction	A.D.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·82647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 + 23·712			
Asvina				**Kartika**				**Margasira**				**Pausha**				**A.D.**	**Magha**				**A.D.**	**Phalguna**				**Chaitra**			
2	S	23	·26	3	O	22	·79	5	N	21	·32	6	D	20○	·85	**44**	1	Jr	19	·38		2	F	17	·91	4	Mr	18	·44
6	S	11	·63	1	O	11	·16	2	N	9	·69	4	D	9○	·22	**45**	5	Jr	7	·75		7	F	6	·28	1	Mr	7	·81
3	Au	31	·99	5	S	30	·52	7	O	30	·05	1	N	28○	·59		3	D	28	·12	**46**	4	Jr	26	·65	6	F	25	·18
2	S	19	·89	4	O	19	·42	5	N	17	·95	7	D	17	·48	**47**	2	Jr	16	·01		3	F	14	·11	5	Mr	16	·07
7	S	9	·26	1	O	8	·79	3	N	7●	·32	4	D	6	·85	**48**	6	Jr	5	·38		7	F	3	·93	2	Mr	4	·44
4	Au	28	·63	6	S	27○	·16	7	O	26	·69	2	N	25	·22		3	D	24	·75	**49**	5	Jr	23	·28	6	F	21	·81
3	S	16○	·52	5	O	16	·05	6	N	14	·58	1	D	14	·11	**50**	2	Jr	12	·62		4	F	11	·18	5	Mr	12	·71
7	S	5	·89	2	O	5	·42	3	N	3	·96	5	D	3	·48	**51**	7	Jr	2	·01		1	Jr	31○	·54	3	Mr	2	·07
5	Au	26	·26	6 1	S O	24 24	·79 ·32	**Margasira Kshaya**				2	N	22	·85		4	D	22	·38	**52**	5	Jr	20○	·91	7 1	F Mr	19 19	·44 ·97
4	S	13	·15	5	O	12	·69	7	N	11	·22	1	D	10	·75	**53**	3	Jr	9●○	·28		4	F	7	·81	6	Mr	9	·34
1	S	2	·52	3	O	2	·05	4	O	31	·58	6	N	30	·11		7	D	29●	·64	**54**	2	Jr	28	·17	3	F	26	·71
7	S	21	·42	1	O	20	·95	3	N	19○	·48	5	D	19	01	**55**	6	Jr	17	·54		1	F	16	·07	2	Mr	17	·60
4	S	10	·79	6	O	10	·32	7	N	8○	·85	2	D	8	·38	**56**	3	Jr	6●	·91		5	F	5	·44	6	Mr	5	·97
2	Au	30	·15	3	S	28	·68	5	O	28●○	·21	6	N	26	·75		1	D	26	·28	**57**	2	Jr	24	·81	4	F	23	·34
1	S	18	·05	2	O	17	·58	4	N	16	·11	5	D	15	·64	**58**	7	Jr	14	·17		1	F	12	·70	3	Mr	14○	·73
5	S	7○	·42	6	O	6●	·95	1	N	5	·48	3	D	5	·01	**59**	4	Jr	3	·54		6	F	2	·07	7	Mr	3○	·60
2	Au	27○	·79	4	S	26	·32	5	O	25	·85	7	N	24	·38		1	D	23	·91	**60**	3	Jr	22	·44	4	F	20●○	·97
1	S	14	·68	3	O	14	·21	4	N	12	·74	6	D	12	·27	**61**	7	Jr	10	·81		2	F	9	·34	3	Mr	10	·87
6	S	4	·05	7	O	3	·58	2	N	2	·11	3	D	1	·64		5	D	31○	·18	**62**	6	Jr	29●	·71	1	F	28	·24
4	S	22	·95	6	O	22	·48	1	N	21	·01	2	D	20○	·54	**63**	4	Jr	19●	·07		5	F	17	·60	7	Mr	19	·13
2	S	12	·32	3	O	11	·85	5	N	10	·38	6	D	9○	·91	**64**	1	Jr	8	·44		2	F	6	·97	4	Mr	7	·50
6	Au	31	·69	1	S	30	·22	2	O	29	·75	4	N	28●	·28		5	D	27	·81	**65**	7	Jr	26	·34	1	F	24	·87
5	S	19	·58	7	O	19	·11	1	N	17	·64	3	D	17	·17	**66**	4	Jr	15	·71		6	F	14	·24	7	Mr	15	·77
2	S	8	·95	4	O	8○	·48	6	N	7●	·01	7	D	6	·54	**67**	2	Jr	5	·07		3	F	3	·60	5	Mr	5	·13
7	Au	29	·32	1	S	27○	·85	3	O	27	·38	4	N	25	·91		6	D	25	·44	**68**	7	Jr	23	·97	2	F	22	·50
6	S	16	·25	7	O	15	·75	2	N	14	·28	3	D	13	·81	**69**	5	Jr	12	·34		6	F	10○	·87	1	Mr	12	·40●
3	S	5●	·58	5	O	5	·11	6	N	3	·64	1	D	3	·17	**70**	2	Jr	1	·70		4	Jr	31○	·23	5	Mr	1	·77
7 2	Au S	25● 24	·95 ·48	4	O	24	·01	5	N	22	·54	**Pausha. Kshaya**					7	D	22	·07	**71**	1	Jr	20○	·60	3 4	F Mr	19 20	·13 ·66
6	S	13	·85	1	O	13	·38	2	N	11	·91	4	D	11	·44	**72**	5	Jr	9	·97		7	[illegible]	8	·50	2	Mr	9	·03
4	S	2	·21	5	O	1	·74	6	O	31	·27	1	N	29○	·81		3	D	29●	·34	**73**	4	Jr	27	·87	6	F	26	·40
3	S	21	·11	5	O	20	·64	9	N	19○	·17	7	D	18	·70	**74**	2	Jr	17	·23		3	F	15	·76	5	Mr	17	·29
7	S	10	·48	2	O	10	·01	3	N	8○	·54	5	D	8	·07	**75**	6	Jr	6	·60		1	F	5	·13	2	Mr	6	·66
4	Au	30	·85	6	S	29	·38	7	O	28●	·91	2	N	27	·44		3	D	26	·97	**76**	5	Jr	25	·50	7	F	24	·03
3	S	17○	·74	5	O	17	·27	6	N	15	·80	1	D	15	·33	**77**	2	Jr	13	·87		4	F	12	·40	5	Mr	13○	·93
1	S	7○	·11	2	O	6	·64	4	N	5	·17	5	D	4	·70	**78**	7	Jr	3	·23		1	F	1	·76	3	Mr	3○	·29
5	Au	27○	·48	7	S	26	·01	1	O	25	·54	3	N	24	·07		4	D	23	·60	**79**	6	Jr	22	·13	7	F	20●	·66
4	S	15	·37	5	O	14	·91	7	N	13	·44	1	D	12	·97	**80**	3	Jr	11○	·50		5	F	10●	·03	6	Mr	10	·56
1	S	3	·74	3	O	3	·27	4	N	1	·80	6	D	1	·33		7	D	30○	·86	**81**	2	Jr	29	·39	3	F	27	·92
7	S	22	·64	2	O	22	·17	3	N	20	·70	5	D	20○	·23	**82**	6	Jr	18	·76		1	F	17	·29	2	Mr	18	·82
5	S	12	·01	6	O	11	·54	1	N	10	·07	2	D	9●	·60	**83**	4	Jr	8	·13		5	F	6	·66	7	Mr	8	·19

TABLE X—

	☉'s Anom col. 6	+ 29·53059	+ 59·06117	+ 88·59176	+ 118·12235
	☾'s Anom col. 7	+ 1·976	+ 3·952	+ 5·928	+ 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
3884	840	705	21M	·5677	16·15159	9·505	**783**	4	1	Ap	6	·72	3	My	6	·25	4	Je	4	·78	6	Jl	4	·31	7	Au	2	·84
3885	841	706	20M	·8264	5·26002	5·662	**784**	5	6	Mr	26	·09	7	Ap	24○	·62	{ 2	My	24	·15	5	Jl	22	·21	6	Au	20	·74
																	{ 3	Je	22	·68								
3886	842	707	21M	·0851	23·89905	3·796	**785**	7	4	Ap	13○	·99	6	My	13	·52	1	Je	12	·05	2	Jl	11	·58	4	Au	10	·11
3887	843	708	21M	·3437	13·00749	27·508	**786**	1	2	Ap	3●	·35	3	My	2	·88	5	Je	1	·41	6	Je	30	·94	1	Jl	30	·47
3888	844	709	21M	·6024	2·11591	23·666	**787**	2	6	Mr	23●	·72	{ 1	Ap	22	·25	4	Je	20	·31	5	Jl	19	·84	7	Au	18○	·37
													{ 2	My	21	·78												
3889	845	710	20M	·8611	20·75494	21·800	**788**	3	5	Ap	10	·62	7	My	10	·15	1	Je	8	·68	3	Jl	8	·21	4	Au	6○	·74
3890	846	711	21M	·1198	9·86338	17·958	**789**	5	2	Mr	30	·98	4	Ap	29	·51	6	My	29	·05	7	Je	27	·58	2	Jl	27●○	·11
3891	847	712	21M	·3785	28·50240	16·091	**790**	6	1	Ap	18	·88	3	My	18	·41	4	Je	16	·94	6	Jl	16	·47	1	Au	15	·00
3892	848	713	21M	·6371	17·61084	12·249	**791**	7	6	Ap	8	·25	7	My	7	·78	2	Je	6○	·31	3	Jl	5●	·84	5	Au	4	·37
3893	849	714	20M	·8958	6·71928	8·407	**792**	1	3	Mr	27	·62	5	Ap	26	·15	6	My	25○	·68	{ 1	Je	24	·21	4	Au	22	·27
																					{ 2	Jl	23	·74				
3894	850	715	21M	·1545	25·35829	6·541	**793**	3	2	Ap	15	·51	4	My	15○	·04	5	Je	13	·57	7	Jl	13	·11	1	Au	11	·64
3895	851	716	21M	·4132	14·46673	2·698	**794**	4	6	Ap	4	·88	1	My	4●	·41	2	Je	2	·94	4	Jl	2	·47	6	Au	1	·00
3896	852	717	21M	·6719	3·57448	26·410	**795**	5	4	Mr	25○	·25	5	Ap	23	·78	{ 7	My	23	·31	3	Jl	21	·37	4	Au	19	·90
																	{ 1	Je	21	·84								
3897	853	718	20M	·9305	22·21419	24·544	**796**	6	3	Ap	12	·15	4	My	11	·68	6	Je	10	·21	7	Jl	9	·74	2	Au	8	·27
3898	854	719	21M	·1892	11·32263	20·702	**797**	1	7	Ap	1	·51	2	My	1	·04	3	My	30	·57	5	Je	29	·10	6	Jl	28	·63
3899	855	720	21M	·4479	0·43106	16·860	**798**	2	{ 4	Mr	21	·88	7	My	19	·94	2	Je	18	·47	4	Jl	18○	·00	5	Au	16	·53
									{ 6	Ap	20	·41																
3900	856	721	21M	·7066	19·07008	14·993	**799**	3	3	Ap	9	·78	5	My	9	·31	6	Je	7	·84	1	Jl	7○	·37	2	Au	5	·90
3901	857	722	20M	·9653	8·17852	11·151	**800**	4	1	Mr	29	·15	2	Ap	27	·68	4	My	27	·21	5	Je	25●○	·74	{ 7	Jl	25	·27
																									{ 1	Au	23	·80
3902	858	723	21M	·2240	26·81755	9·285	**801**	6	7	Ap	17	·04	1	My	16	·57	3	Je	15●	·11	4	Jl	14	·64	6	Au	13	·17
3903	859	724	21M	·4826	15·92587	5·443	**802**	7	4	Ap	6	·41	5	My	5○	·94	7	Je	4●	·47	2	Jl	4	·00	3	Au	2	·53
3904	860	725	21M	·7413	5·03441	1·601	**803**	1	1	Mr	26	·78	3	Ap	25●○	·31	{ 4	My	24	·84	7	Jl	22	·90	2	Au	21	·43
																	{ 6	Je	23	·37								
3905	861	726	21M	·0000	23·67344	27·289	**804**	2	7	Ap	13	·68	2	My	13	·21	3	Je	11	·74	5	Jl	11	·27	6	Au	9	·80
3906	862	727	21M	·2587	12·78187	23·447	**805**	4	5	Ap	3	·04	6	My	2	·57	1	Je	1	·10	2	Je	30	·63	4	Jl	30	·17
3907	863	728	21M	·5174	1·89031	19·604	**806**	5	2	Mr	23	·41	{ 3	Ap	21	·94	7	Je	20	·00	1	Jl	19	·53	3	Au	18○	·06
													{ 5	My	21	·47												
3908	864	729	21M	·7760	20·52934	17·738	**807**	6	1	Ap	11	·31	2	My	10	·84	4	Je	9	·37	5	Jl	8	·90	7	Au	7○	·43
3909	865	730	21M	·0347	9·63776	13·896	**808**	7	5	Mr	30	·67	7	Ap	29	·21	1	My	28	·74	3	Je	27	·27	4	Jl	26●	·80
3910	866	731	21M	·2934	28·27679	12·030	**809**	2	4	Ap	18	·57	6	My	18	·10	7	Je	16○	·63	2	Jl	16●	·16	3	Au	14	·69
3911	867	732	21M	·5521	17·38523	8·187	**810**	3	1	Ap	7	·94	3	My	7	·47	5	Je	6○	·00	6	Jl	5	·53	1	Au	4	·06
3912	868	[illegible]	21M	·8108	6·49366	4·345	**811**	4	6	Mr	28	·31	7	Ap	26	·84	2	My	26○	·37	{ 3	Je	24	·90	6	Au	22	·96
																					{ 5	Jl	24	·43				
3913	869	734	21M	·0694	25·13269	2·479	**812**	5	5	Ap	15	·20	6	My	14●	·73	1	Je	13	·27	2	Jl	12	·80	4	Au	11	·33
3914	870	735	21M	·3281	14·24112	26·191	**813**	7	2	Ap	4○	·57	4	My	4●	·10	5	Je	2	·63	7	Jl	2	·16	1	Jl	31	·69
3915	871	736	21M	·5868	3·34955	22·349	**814**	1	6	Mr	24●○	·94	1	Ap	23	·47	{ 3	My	23	·00	6	Jl	21	·06	7	Au	19	·59
																	{ 4	Je	21	·53								
3916	872	737	21M	·8455	21·98858	20·483	**815**	2	5	Ap	12	·84	7	My	12	·37	1	Je	10	·90	3	Jl	10	·43	4	Au	8	·96
3917	873	738	21M	·1042	11·09702	16·640	**816**	3	3	Ap	1	·20	4	Ap	30	·73	6	My	30	·26	7	Je	28	·79	2	Jl	28	·33
3918	874	739	21M	·3628	0·20545	12·799	**817**	5	{ 7	Mr	21	·57	3	My	19	·63	5	Je	18	·16	6	Jl	17○	·69	1	Au	16	·22
									{ 2	Ap	20	·10																
3919	875	740	21M	·6215	18·84448	10·932	**818**	6	6	Ap	9	·47	1	My	9	·00	2	Je	7	·53	4	Jl	7●○	·06	5	Au	5	·59
3920	876	741	21M	·8802	7·95291	7·089	**819**	7	3	Mr	29	·83	5	Ap	28	·37	6	My	27	·90	1	Je	26●	·43	{ 2	Jl	25	·96
																									{ 4	Au	24	·49
3921	877	742	21M	·1389	26·59193	5·223	**820**	1	2	Ap	16	·73	4	My	16○	·26	5	Je	14	·79	7	Jl	14	32	1	Au	12	·85
[illegible]	878	743	21M	·3976	15·70037	1·381	**821**	3	7	Ap	6	·10	1	My	5●○	·63	3	Je	4	·16	4	Jl	3	69	6	Au	2	·22

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77529	+ 295·30588	+324·83647 / +354·36705
+ 9·880	+ 11·856	+ 13·832	+ 15·808	+ 17·784	+ 19·760	+ 21·736 / + 23·712

Asvina Week-day	Month	Day	Fraction	Kartika Week-day	Month	Day	Fraction	Margasira Week-day	Month	Day	Fraction	Pausha Week-day	Month	Day	Fraction	A.D.	Magha Week-day	Month	Day	Fraction	A.D.	Phalguna Week-day	Month	Day	Fraction	Chaitra Week-day	Month	Day	Fraction
2	S	1	·37	3	S	30	·90	5	O	30	·43	6	N	28●	·97		1	D	28	·50	84	3	Jr	27	·03	4	F	25	·56
1	S	19	·27	2	O	18○	·80	4	N	17	·33	5	D	16	·86	85	7	Jr	15	·39		1	F	13	·92	3	Mr	15	·45
5	S	8	·64	7	O	8○	·17	1	N	6	·70	3	D	6	·23	86	4	Jr	4	·76		6	F	3	·29	7	Mr	4	·82
3	Au	29	·01	4	S	27●	·54	6	O	27	·07	7	N	25	·60		2	D	25	·13	87	3	Jr	23	·66	5	F	22○	·19
1	S	16●	·90	3	O	16	·43	4	N	14	·96	6	D	14	·49	88	1	Jr	13	·03		2	F	11○	·56	4	Mr	12	·09
6	S	5	·27	7	O	4	·80	2	N	3	·33	3	D	2	·86	89	5	Jr	1	·39		6	Jr	30●○	·92	1	Mr	1	·45
{3	Au	25	·64	6	O	23	·70	1	N	22	·23	2	D	21	·76	90	4	Jr	20●	·29		5	F	18	·82	7	Mr	20	·35
{5	S	24	·17																										
2	S	13	·53	4	O	13	·07	5	N	11	·60	7	D	11○	·13	91	1	Jr	9●	·66		3	F	8	·19	4	Mr	9	·72
6	S	2	·90	1	O	2	·43	2	O	31	·96	4	N	30○	·49		6	D	30	·02	92	7	Jr	28	·55	2	F	27	·09
5	S	20	·80	7	O	20	·33	1	N	18●○	·86	3	D	18	·39	93	4	Jr	16	·92		6	F	15	·45	7	Mr	16	·98
3	S	10	·17	4	O	9	·70	6	N	8	·23	7	D	7	·76	94	2	Jr	6	·29		3	F	4	·82	5	Mr	6	·35
7	Au	30	·53	2	S	29○	·06	3	O	28	·59	5	N	27	·13		6	D	26	·66	95	1	Jr	25	·19	2	F	23	·72
6	S	18○	·43	7	O	17	·96	2	N	16	·50	4	D	16	·02	96	5	Jr	14	·55		7	F	13	·08	1	Mr	13○	·6
3	S	6●○	·80	5	O	6	·33	6	N	4	·86	1	D	4	·39	97	2	Jr	2	·92		4	F	1	·45	5	Mr	2	·98
1	Au	27	·17	2	S	25	·70	4	O	25	·23	5	N	23	·76		7	D	23	·29	98	1	Jr	21○	·82	3	F	20	·35
7	S	15	·06	1	O	14	·59	3	N	13	·12	4	D	12	·65	99	6	Jr	11○	·19		7	F	9	·72	2	Mr	11	·25
4	S	4	·43	5	O	3	·96	7	N	2	·49	2	D	2	·02		3	D	31○	·55	800	5	Jr	30	·08	6	F	28	·61
3	S	22	·32	4	O	21	·86	6	N	20	·39	7	D	19	·92	01	2	Jr	18	·45		3	F	16	·98	5	Mr	18	·51
7	S	11	·70	2	O	11	·23	3	N	9	·76	5	D	9	·29	02	6	Jr	7	·82		1	F	6	·35	2	Mr	7	·88
5	S	1	·06	6	S	30	·59	1	O	30○	·13	2	N	28●	·66		4	D	28	·19	03	5	Jr	26	·72	7	F	25	·25
3	S	19	·96	5	O	19○	·49	7	N	18	·02	1	D	17	·55	04	3	Jr	16	·09		4	F	14	·61	6	Mr	15	·15
1	S	8	·33	2	O	7	·86	4	N	6	·39	5	D	5	·92	05	7	Jr	4	·45		1	F	2	·98	3	Mr	4	·51
5	Au	28○	·70	7	S	27	·23	1	O	26	·76	3	N	25	·29		4	D	24	·82	06	6	Jr	23	·35	1	F	21○	·96
4	S	16●	·59	6	O	16	·12	7	N	14	·65	2	D	14	·19	07	3	Jr	12	·72		5	F	11●○	·25	6	Mr	12	·78
1	S	5	·96	3	O	5	·49	5	N	4	·02	6	D	3	·55	08	1	Jr	2	·08		2	Jr	31●	·61	4	Mr	1	·14
{6	Au	25	·32	2	O	23	·39	3	N	21	·92	5	D	21○	·45	09	6	Jr	19	·98		1	F	18	·51	3	Mr	20	·04
{7	S	23	·86																										
5	S	13	·23	6	O	12	·76	1	N	11	·29	2	D	10○	·82	10	4	Jr	9	·35		5	F	7	·88	7	Mr	9	·41
2	S	2	·59	4	O	2	·12	5	O	31	·65	7	N	30●○	·18		1	D	29	·71	11	3	Jr	28	·25	4	F	26	·78
1	S	21	·49	3	O	21	·02	4	N	19	·55	6	D	19	·08	12	7	Jr	17	·61		2	F	16	·14	3	Mr	16	·67
5	S	9	·86	7	O	9○	·39	1	N	7●	·92	3	D	7	·45	13	4	Jr	5	·98		6	F	4	·51	1	Mr	6	·04
3	Au	30	·22	4	S	28○	·75	6	O	28	·29	7	N	26	·82		2	D	26	·35	14	3	Jr	24	·88	5	F	23	·41
2	S	18○	·12	3	O	17	·65	5	N	16	·18	6	D	15	·71	15	1	Jr	14	·24		2	F	12	·77	4	Mr	14	·31
6	S	7●	·49	1	O	7	·02	2	N	5	·55	4	D	5	·08	16	5	Jr	3	·61		7	F	2○	·14	1	Mr	2●	·67
3	Au	26	·86	5	S	25	·39	6	O	24	·92	1	N	23	·45		2	D	22	·98	17	4	Jr	21○	·51	6	F	20●	·04
2	S	14	·75	4	O	14	·28	5	N	12	·81	7	D	12	·35	18	1	Jr	10○	·88		3	F	9	·41	4	Mr	10	·94
7	S	4	·12	1	O	3	65	3	N	2	·18	4	D	1	·71		6	D	31●	·24	19	7	Jr	29	·77	2	F	28	·30
6	S	23	·02	7	O	22	·55	2	N	21	·08	3	D	20	·61	20	5	Jr	19	·14		6	F	17	·67	1	Mr	18	·20
3	S	11	·39	4	O	10	·92	6	N	9○	·45	7	D	8●	·98	21	2	Jr	7	·51		4	F	6	·04	[illegible]	Mr	7	·57
7	Au	31	·75	2	S	30	·28	3	O	29○	·81	5	N	28	·34		6	D	27	·87	22	1	Jr	26	·41	2	F	24	·94

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	☉'s Anom col. 6 / ☾'s Anom col. 7 — Vaisakha Week-day	Month	Day	Fraction	+ 29·53059 / + 1·976 — Jyeshta Week-day	Month	Day	Fraction	+ 59·06117 / + 3·952 — Ashada Week-day	Month	Day	Fraction	+ 88·59176 / + 5·928 — Sravana Week-day	Month	Day	Fraction	+ 118·12235 / + 7·904 — Bhadrapada Week-day	Month	Day	Fraction
3923	879	744	21M	·6562	4·81881	25·103	**822**	4	4	Mr	26	·47	6	Ap	25●	·00	7	My	24	·53	3	Jl	22	·59	5	Au	21	·12
																	2	Je	23	·06								
3924	880	745	21M	·9149	23·44782	23·227	**823**	5	3	Ap	14	·36	4	My	13	·89	6	Je	12	·43	7	Jl	11	·96	2	Au	10	·49
3925	881	746	21M	·1736	12·55626	19·385	**824**	6	7	Ap	2	·73	2	My	2	·26	3	My	31	·79	5	Je	30	·32	6	Jl	29	·85
3926	882	747	21M	·4323	1·66470	15·543	**825**	1	5	Mr	23	·10	6	Ap	21	·63	2	Je	19	·69	4	Jl	19	·22	5	Au	17○	·75
													1	My	21	·16												
3927	883	748	21M	·6910	20·30372	13·676	**826**	2	4	Ap	11	·00	5	My	10	·53	7	Je	9	·06	1	Jl	8	·59	3	Au	7●	·12
3928	884	749	21M	·9496	9·41246	9·834	**827**	3	1	Mr	31	·36	2	Ap	29	·89	4	My	29	·42	5	Je	27○	·95	7	Jl	27	·49
3929	885	750	21M	·2083	28·05119	7·968	**828**	4	7	Ap	18	·26	1	My	17	·79	3	Je	16○	·32	4	Jl	15	·85	6	Au	14	·38
3930	886	751	21M	·4670	17·15961	4·126	**829**	6	4	Ap	7	·63	6	My	7	·16	7	Je	5●○	·69	2	Jl	5	·22	3	Au	3	·75
3931	887	752	21M	·7257	6·26805	0·283	**830**	7	1	Mr	27	·99	3	Ap	26	·53	5	My	26	·06	6	Je	24	·59	2	Au	22	·65
																					1	Jl	24	·12				
3932	888	753	21M	·9844	24·90708	25·971	**831**	1	7	Ap	15○	·89	2	My	15●	·42	3	Je	13	·95	5	Jl	13	·48	7	Au	12	·01
3933	889	754	21M	·2431	14·01551	22·129	**832**	2	5	Ap	4○	·26	6	My	3	·79	1	Je	2	·32	2	Jl	1	·85	4	Jl	31	·38
3934	890	755	21M	·5017	3·12395	18·287	**833**	4	2	Mr	24●○	·63	4	Ap	23	·16	5	My	22	·69	1	Jl	20	·75	3	Au	19	·28
																	7	Je	21	·22								
3935	891	756	21M	·7604	21·76298	16·421	**834**	5	1	Ap	12	·52	3	My	12	·05	4	Je	10	·59	6	Jl	10	·12	7	Au	8	·65
3936	892	757	22M	·0191	10·87140	12·579	**835**	6	5	Ap	1	·89	7	My	1	·42	2	My	30	·95	3	Je	29	·48	5	Jl	29○	·01
3937	893	758	21M	·2778	29·51043	8·736	**836**	7	4	Ap	19	·79	6	My	19	·32	7	Je	17	·85	2	Jl	17●○	·38	3	Au	15	·91
3938	894	759	21M	·5365	18·61887	6·870	**837**	2	2	Ap	9	·16	3	My	8	·69	5	Je	7	·22	6	Jl	6	·75	1	Au	5	·28
3939	895	760	21M	·7951	7·72760	3·028	**838**	3	6	Mr	29	·52	1	Ap	28	·05	2	My	27○	·58	4	Je	26	·11	7	Au	24	·18
																					5	Jl	25	·65				
3940	896	761	22M	·0538	26·36632	1·161	**839**	4	5	Ap	17	·42	6	My	16○	·95	1	Je	15	·48	3	Jl	15	·01	4	Au	13	·54
3941	897	732	21M	·3125	15·47476	24·874	**840**	5	2	Ap	5	·79	4	My	5●○	·32	5	Je	3	·85	7	Jl	3	·38	1	Au	1	·91
3942	898	763	21M	·5712	4·58319	21·032	**841**	7	7	Mr	26	·15	1	Ap	24●	·69	3	My	24	·22	6	Jl	22	·28	7	Au	20	·81
																	4	Je	22	·75								
3943	899	764	21M	·8299	23·22222	19·176	**842**	1	6	Ap	14	·05	7	My	13	·58	2	Je	12	·11	3	Jl	11	·64	5	Au	10	·17
3944	900	765	22M	·0885	12·33066	15·323	**843**	2	3	Ap	3	·42	4	My	2	·95	6	Je	1	·48	1	Jl	1	·01	2	Jl	30	·54
3945	901	766	21M	·3472	1·43909	11·481	**844**	3	7	Mr	22	·79	2	Ap	21	·32	5	Je	19	·38	6	Jl	18	·91	1	Au	17	.44
													3	My	20	·85												
3946	902	767	21M	·6059	20·07811	9·615	**845**	5	6	Ap	10	·68	1	My	10	·21	2	Je	8	·75	4	Jl	8○	·28	5	Au	6●	·81
3947	903	768	21M	·8646	9·18655	5·773	**846**	6	4	Mr	31	·05	6	Ap	29	·58	7	My	29	·11	1	Je	27○	64	3	Jl	27	·17
3948	904	769	22M	·1233	27·82557	3·906	**847**	7	2	Ap	18	·95	4	My	18	·48	6	Je	17○	·01	7	Jl	16	·54	2	Au	15	·07
3949	905	770	21M	·3819	16·93401	0·064	**848**	1	7	Ap	7	·32	1	My	6	·85	3	Je	5●	·38	4	Jl	4	·91	6	Au	3	·44
3950	906	771	21M	·6406	6·04245	23·776	**849**	3	4	Mr	27	·68	6	Ap	26○	·21	7	My	25	·74	2	Je	24	·27	5	Au	22	·34
																					3	Jl	23	·81				
3951	907	772	21M	·8993	24·68146	21·910	**850**	4	3	Ap	15○	·58	5	My	15	·11	6	Je	13	·64	1	Jl	13	·17	2	Au	11	·70
3952	908	773	22M	·1580	13·78990	18·068	**851**	5	7	Ap	4●○	·95	2	My	4	·48	4	Je	3	·01	5	Jl	2	·54	7	Au	1	·07
3953	909	774	21M	·4167	2·89834	14·226	**852**	6	5	Mr	24	·31	6	Ap	22	·85	1	My	22	·38	4	Jl	20	·44	5	Au	18	·97
																	2	Je	20	·91								
3954	910	775	21M	·6753	21·53736	12·359	**853**	1	4	Ap	12	·21	5	My	11	·74	7	Je	10	·27	1	Jl	9	·80	3	Au	8○	·33
3955	911	776	21M	·9340	10·64580	8·517	**854**	2	1	Ap	1	·58	3	My	1	·11	4	My	30	·64	6	Je	29	·17	7	Jl	28○	·70
3956	912	777	22M	·1927	29·28482	6·651	**855**	3	7	Ap	20	·48	2	My	20	·01	3	Je	18	·54	5	Jl	18	·07	6	Au	16	·60
3957	913	778	21M	·4514	18·39326	2·809	**856**	4	4	Ap	8	·84	6	My	8	·37	7	Je	6○	·91	2	Jl	6●	·44	3	Au	4	·97
3958	914	779	21M	·7101	7·50169	26·521	**857**	6	2	Mr	29	·21	3	Ap	27	.74	5	My	27○	·27	6	Je	25	·80	2	Au	23	·86
																					1	Jl	25	·33				
3959	915	780	21M	·9687	26·14065	24·655	**858**	7	1	Ap	17	·11	2	My	16○	·64	4	Je	15	·17	5	Jl	14	·70	7	Au	13	·23
3960	916	781	22M	·2274	15·24976	20·813	**859**	1	5	Ap	6	·48	7	My	6●	·01	1	Je	4	·54	3	Jl	4	·07	4	Au	2	·60
3961	917	782	21M	·4861	4·35759	16·970	**860**	2	2	Mr	25○	·84	4	Ap	24	·37	5	My	23	·90	1	Jl	21	·97	3	Au	20	·50
																	7	Je	22	·43								

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Ārya Siddhanta.

Asvina Week-day	Asvina Month	Asvina Day	Asvina Fraction	Kartika Week-day	Kartika Month	Kartika Day	Kartika Fraction	Margasira Week-day	Margasira Month	Margasira Day	Margasira Fraction	Pausha Week-day	Pausha Month	Pausha Day	Pausha Fraction	A.D.	Magha Week-day	Magha Month	Magha Day	Magha Fraction	A.D.	Phalguna Week-day	Phalguna Month	Phalguna Day	Phalguna Fraction	Chaitra Week-day	Chaitra Month	Chaitra Day	Chaitra Fraction
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
6	S	19	·65	1	O	19○	·18	2	N	17	·71	4	D	17	·24	23	5	Jr	15	·27		7	F	14	·30	1	Mr	15	·83
4	S	9○	·02	5	O	8●	·55	7	N	7	·08	1	D	6	·61	24	3	Jr	5	·14		4	F	3	·67	6	Mr	4○	·20
1	Au	28○	·38	2	S	26●	·91	4	O	26	·45	5	N	24	·98		7	D	24	·51	25	2	Jr	23	·04	3	F	21○	·57
7	S	16	·28	1	O	15	·81	3	N	14	·34	4	D	13	·87	26	6	Jr	12	·40		7	F	10	·93	2	Mr	12	·47
4	S	5	·65	6	O	5	·18	7	N	3	·71	2	D	3	·24	27	3	Jr	1○	·77		5	Jr	31	·30	6	Mr	1	·83
{2 / 3	Au / S	26 / 24	·02 / ·55	5	O	24	·08	6	N	22	·61	1	D	22○	·14	28	2	Jr	20	·67		4	F	19	·20	5	Mr	19	·73
1	S	12	·91	2	O	12	·44	4	N	10	·97	5	D	10○	·51	29	7	Jr	9	·04		1	F	7	·57	3	Mr	9	·10
5	S	2	·28	6	O	1	·81	1	O	31	·34	2	N	29●	·87		4	D	29	·40	30	5	Jr	27	·93	7	F	26	·46
4	S	21	·18	5	O	20○	·71	7	N	19	·24	1	D	18	·77	31	3	Jr	17	·30		5	F	15	·83	6	Mr	17	·36
1	S	10	·55	3	O	10○	·08	4	N	8	·61	6	D	8	·14	32	7	Jr	6	·67		2	F	5	·20	3	Mr	5	·73
5	Au	29	·91	7	S	28○	·44	1	O	27	·97	3	N	26	·50		5	D	26	·03	33	6	Jr	24	·57	1	F	23	·10
4	S	17●	·81	6	O	17	·34	7	N	15	·87	2	D	15	·40	34	3	Jr	13	·93		5	F	12○	·46	6	Mr	13●	·99
2	S	7●	·18	3	O	6	·71	5	N	5	·24	6	D	4	·77	35	1	Jr	3	·30		2	F	1○	·83	4	Mr	3●	[illegible]
6	Au	27	·54	1	S	26	·07	2	O	25	·61	4	N	24	·14		5	D	23	·67	36	7	Jr	22○	·20	{1 / 3	F / Mr	20 / 21	·73 / ·26
5	S	14	·44	6	O	13	·97	1	N	12	·50	3	D	12	·03	37	4	Jr	10	·56		6	F	9	·09	7	Mr	10	·63
2	S	3	·83	4	O	3	·34	5	N	1	·87	7	D	1	·40		1	D	30●	·93	38	3	Jr	29	·46	4	F	27	·99
1	S	22	·71	3	O	22	·24	4	N	20○	·77	6	D	20	·30	39	7	Jr	18	·83		2	F	17	·36	3	Mr	18	·89
6	S	12	·07	7	O	11	·60	2	N	10○	·13	3	D	9	·67	40	5	Jr	8	·20		6	F	6	·73	1	Mr	7	·26
3	Au	31	·44	4	S	29	·97	6	O	29●○	·50	1	N	28	·03		2	D	27	·56	41	4	Jr	26	·09	5	F	24	·62
2	S	19	·34	3	O	18●	·87	5	N	17	·40	6	D	16	·93	42	1	Jr	15	·46		2	F	13	·99	4	Mr	15○	·52
6	S	8○	·71	1	O	8	·24	2	N	6	·77	4	D	6	·30	43	5	Jr	4	·83		7	F	3	·36	1	Mr	4●○	·89
4	Au	29●○	·07	5	S	27	·60	7	O	27	·13	1	N	25	·66		3	D	25	·19	44	4	Jr	23	·73	6	F	22●	·26
2	S	15	·97	4	O	15	·50	6	N	14	·03	7	D	13	·56	45	2	Jr	12○	·09		3	F	10●	·62	5	Mr	12	·15
7	S	5	·34	1	O	4	·87	3	N	3	·40	4	D	2	·93	46	6	Jr	1○	·46		7	Jr	30	·99	2	Mr	1	·52
4 / 6	Au / S	25 / 24	·70 / ·23	7	O	23	·77	2	N	22	·30	3	D	21●○	·83	47	5	Jr	20	·36		6	F	18	·89	1	Mr	20	·42
3	S	13	·60	5	O	13	·13	6	N	11	·66	1	D	11	·19	48	2	Jr	9	·72		4	F	8	·25	5	Mr	8	·79
7	S	1	·97	2	O	1	·50	4	O	31○	·03	5	N	29	·56		7	D	29	·09	49	1	Jr	27	·62	3	F	26	·15
6	S	20	·87	1	O	20○	·40	2	N	18	·93	4	D	18	·46	50	5	Jr	16	·99		7	F	15	·52	2	Mr	17	·05
4	S	10	·23	5	O	9●○	·76	7	N	8	·29	1	D	7	·83	51	3	Jr	6	·36		4	F	4	·89	6	Mr	6	·42
1	Au	30	·60	3	S	29	·13	4	O	28	·66	6	N	27	·19		7	D	26	·72	52	2	Jr	25	·25	3	F	23○	·78
7	S	17	·50	2	O	17	·03	3	N	15	·56	5	D	15	·09	53	6	Jr	13	·62		1	F	12○	·15	2	Mr	13	·68
4	S	6●	·87	6	O	6	·40	7	N	4	·93	2	D	4	·46	54	3	Jr	2	·99		5	F	1●○	·52	7	Mr	3	·05
2	Au	27	·23	3	S	25	·76	5	O	25	·29	6	N	23	·82		1	D	23	·35	55	2	Jr	21	·89	{4 / 5	F / Mr	20 / 21	·42 / ·95
1	S	15	·13	2	O	14	·66	4	N	13	·19	5	D	12	·72	56	7	Jr	11	·25		1	F	9	·78	3	Mr	10	·31
5	S	3	·50	7	O	3	·03	1	N	1	·56	3	D	1○	·09		4	D	30●	·62	57	6	Jr	29	·18	7	F	27	·68
4	S	22	·39	5	O	21	·93	7	N	20○	·46	1	D	19	·99	58	3	Jr	18	·52		5	F	17	·05	6	Mr	18	·58
1	S	11	·76	3	O	11	·29	4	N	9○	·82	6	D	9	·35	59	7	Jr	7	·88		2	F	6	·41	3	Mr	7	·95
6	S	1	·13	7	S	30	·66	2	O	30	·19	3	N	28	·72		5	D	28	·25	60	6	Jr	26	·78	1	F	25	·31
5	S	19○	·03	6	O	18●	·56	1	N	17	·09	2	D	16	·62	61	4	Jr	15	·15		5	F	13	·68	7	Mr	15●○	·21

TABLE X—

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Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3962	918	783	21M	·7448	22·99662	15·104	**861**	4	1	Ap	13	·74	3	My	13	·27	4	Je	11	80	6	Jl	11	·33	7	Au	9	·86
3963	919	784	22M	·0035	12·10505	11·262	**862**	5	6	Ap	3	·11	7	My	2	·64	2	Je	1	17	3	Je	30	·70	5	Jl	30	·23
3964	920	785	22M	·2621	1·21348	7·419	**863**	6	3	Mr	23	·47	6	My	21	·54	1	Je	20	85	2	Jl	19○	·60	4	Au	18●	·13
									5	Ap	22	·01																
3965	921	786	21M	·5208	19·85251	5·553	**864**	7	2	Ap	10	·37	3	My	9	·90	5	Je	8	·43	6	Jl	7○	·96	1	Au	6●	·49
3966	922	787	21M	·7795	8·96095	1·711	**865**	2	6	Mr	30	·74	1	Ap	29	·27	2	My	28	·80	4	Je	27○	·33	5	Jl	26	·86
																									7	Au	25	·39
3967	923	788	22M	·0382	27·59996	27·399	**866**	3	5	Ap	18	·64	7	My	18	·17	1	Je	16●	·70	3	Jl	16	·23	4	Au	14	·76
3968	924	789	22M	·2969	16·70841	23·557	**867**	4	3	Ap	8	·00	4	My	7○	·53	6	Je	6●	·07	7	Jl	5	·60	2	Au	4	·13
3969	925	790	21M	·5556	5·81684	19·715	**868**	5	7	Mr	27	·37	1	Ap	25○	·90	3	My	25	·43	4	Je	23	·96	1	Au	22	·02
																					6	Jl	23	·49				
3970	926	791	21M	·8142	24·45586	17·848	**869**	7	6	Ap	15○	·27	7	My	14	·80	2	Je	13	·33	3	Jl	12	·86	5	Au	11	·39
3971	927	792	22M	·0729	13·56430	14·006	**870**	1	3	Ap	4	·64	5	My	4	·17	6	Je	2	·70	1	Jl	2	·23	2	Jl	31	·76
3972	928	793	22M	·3316	2·67283	10·164	**871**	2	1	Mr	25	·00	2	Ap	23	·53	5	Je	21	·59	7	Jl	21	·12	1	Au	19○	·66
													4	My	23	·06												
3973	929	794	21M	·5903	21·31175	8·298	**872**	3	6	Ap	11	·90	1	My	11	·43	2	Je	9	·96	4	Jl	9	·49	6	Au	8○	·09
3974	930	795	21M	·8490	10·42019	4·455	**873**	5	4	Ap	1	·27	5	Ap	30	·80	7	My	30	·33	1	Je	28	·86	3	Jl	28●	·32
3975	931	796	22M	·1076	29·05922	2·589	**874**	6	3	Ap	20	·16	4	My	19	·70	6	Je	18○	·23	7	Jl	17●	·76	2	Au	16	·29
3976	932	797	22M	·3663	18·16765	26·301	**875**	7	7	Ap	9	·53	2	My	9	·06	3	Je	7○	·59	5	Jl	7	·12	6	Au	5	·65
3977	933	798	21M	·6250	7·27608	22·459	**876**	1	4	Mr	28	·90	6	Ap	27	·43	7	My	26●○	·96	2	Je	25	·49	5	Au	23	·55
																					4	Jl	25	·02				
3978	934	799	21M	·8837	25·91511	20·593	**877**	3	3	Ap	16	·80	5	My	16	·32	6	Je	14	·86	1	Jl	14	·39	2	Au	12	·92
3979	935	800	22M	·1424	15·02354	16·751	**878**	4	1	Ap	6○	·16	2	My	5●	·69	4	Je	4	·22	5	Jl	3	·76	7	Au	2	·29
3980	936	801	22M	·4009	4·13198	12·908	**879**	5	5	Mr	26○	·53	7	Ap	25	·06	1	My	24	·59	4	Jl	22	·65	6	Au	21	·18
																	3	Je	23	·12								
3981	937	802	21M	·6597	22·77101	11·042	**880**	6	4	Ap	13	·43	5	My	12	·96	7	Je	11	·49	2	Jl	11	·02	3	Au	9	·55
3982	938	803	21M	·9184	11·87944	7·200	**881**	1	1	Ap	2	·80	3	My	2	·33	4	My	31	·86	6	Je	30	·39	7	Jl	29○	·92
3983	939	804	22M	·1771	0·98787	3·358	**882**	2	6	Mr	23	·16	2	My	21	·22	3	Je	19	·75	5	Jl	19○	·28	6	Au	17	·82
									7	Ap	21	·69																
3984	940	805	22M	·4358	19·62690	1·491	**883**	3	5	Ap	11	·06	6	My	10	·59	1	Je	9	·12	2	Jl	8●○	·65	4	Au	7	·18
3985	941	806	21M	·6944	8·73533	25·204	**884**	4	2	Mr	30	·43	3	Ap	28	·96	5	My	28	·49	7	Je	27	·05	1	Jl	26	·55
																									3	Au	25	·08
3986	942	807	21M	·9531	27·37436	23·337	**885**	6	1	Ap	18	·32	2	My	17○	·86	4	Je	16●	·39	5	Jl	15	·92	7	Au	14	·45
3987	943	808	22M	·2118	16·48280	19·495	**886**	7	5	Ap	7	·69	7	My	7○	·22	1	Je	5	·75	3	Jl	5	·28	4	Au	3	·81
3988	944	809	22M	·4705	5·59122	15·653	**887**	1	3	Mr	28	·06	4	Ap	26○	·59	6	My	26	·12	7	Je	24	·65	3	Au	22	.71
																					2	Jl	24	·18				
3989	945	810	21M	·7292	24·23025	13·787	**888**	2	1	Ap	14●	·96	3	My	14	·49	5	Je	13	·02	6	Jl	12	·55	1	Au	11	·08
3990	946	811	21M	·9878	13·33869	9·944	**889**	4	6	Ap	4●	·32	7	My	3	·85	2	Je	2	·38	3	Jl	1	·92	5	Jl	31	·45
3991	947	812	22M	·2465	2·44712	6·102	**890**	5	3	Mr	24	·69	5	Ap	23	·22	1	Je	21	·28	2	Jl	20	·81	4	Au	19●○	·34
													6	My	22	·75												
3992	948	813	22M	·5052	21·08615	4·236	**891**	6	2	Ap	12	·59	4	My	12	·12	5	Je	10	·65	7	Jl	10	·18	1	Au	8●○	·71
3993	949	814	21M	·7639	10·19459	0·394	**892**	7	6	Mr	31	·96	1	Ap	30	·49	3	My	30	·02	4	Je	28○	·55	6	Jl	28	·08
3994	950	815	22M	·0226	28·83360	26·082	**893**	2	5	Ap	19	·85	7	My	19	·38	1	Je	17○	·91	3	Jl	17	·44	4	Au	15	·98
3995	951	816	22M	·2812	17·94204	22·240	**894**	3	3	Ap	9	·22	4	My	8	·75	6	Je	7●○	·28	7	Jl	6	·81	2	Au	5	·34
3996	952	817	22M	·5399	7·04979	18·397	**895**	4	7	Mr	29	·59	2	Ap	28	·12	3	My	27●	·65	5	Je	26	·18	1	Au	24	·24
																					6	Jl	25	·71				
3997	953	818	21M	·7986	25·68950	16·531	**896**	5	6	Ap	16○	·48	1	My	16	·02	2	Je	14	·55	4	Jl	14	·08	5	Au	12	·61
3998	954	819	22M	·0573	14·79794	12·689	**897**	8	3	Ap	5●○	·85	5	My	5	·38	6	Je	3	·91	1	Jl	3	·44	2	Au	1	·97
3999	955	820	22M	·3160	3·90637	8·846	**898**	1	1	Mr	26●○	·22	2	Ap	24	·75	4	My	24	·28	7	Jl	22	·34	1	Au	20	·87
																	5	Je	22	·81								
4000	956	821	22M	·5746	22·54539	6·980	**899**	2	7	Ap	14	·12	1	My	13	·65	3	Je	12	·18	4	Jl	11	·71	6	Au	10○	·24

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	8○	·39	3	O	7	·92	5	N	6	·45	7	D	6	·09	**62**	1	Jr	4	·52		3	F	3	·05	4	Mr	4●	·58
6	Au	28●	·76	1	S	27	·29	2	O	26	·82	4	N	25	·35		5	D	24	·88	**63**	7	Jr	23○	·41	1	F	21	·94
5	S	16	·66	7	O	16	·19	1	N	14	·72	3	D	14	·25	**64**	4	Jr	12○	·78		6	F	11	·31	7	Mr	11	·84
3	S	5	·03	4	O	4	·56	6	N	3	·09	7	D	2	·62	**65**	2	Jr	1○	·15		3	Jr	30	·68	5	Mr	1	·21
1	S	23	·92	3	O	23	·45	4	N	21	·98	6	D	21	·51	**66**	1	Jr	20	·05		2	F	18	·58	4	Mr	20	·11
6	S	13	·29	7	O	12	·82	2	N	11○	·35	3	D	10●	·88	**67**	5	Jr	9	·41		6	F	7	·94	1	Mr	9	·47
3	S	2	·66	5	O	2	·19	6	O	31○	·72	1	N	30	·25		2	D	29	·78	**68**	4	Jr	28	·31	5	F	26	·84
2	S	20	·55	4	O	20○	·09	5	N	18	·62	7	D	18	·15	**69**	1	Jr	16	·68		3	F	15	·21	4	Mr	16	·74
6	S	9	·92	1	O	9●	·45	2	N	7	·98	4	D	7	·51	**70**	6	Jr	6	·04		7	F	4	·57	2	Mr	6○	·11
4	Au	30	·29	5	S	28	·82	7	O	28	·35	1	N	26	·88		3	D	26	·41	**71**	4	Jr	24	·94	6	F	23○	·47
3	S	18	·19	4	O	17	·72	6	N	16	·25	7	D	15	·78	**72**	2	Jr	14	·31		3	F	12○	·84	5	Mr	13	·37
7	S	6	·55	2	O	6	·08	3	N	4	·61	5	D	4	·14	**73**	6	Jr	2	·68		1	F	1●	·21	2	Mr	2	·74
4	Au	26	·92	6	S	25	·45	7	O	24	·98	2	N	23	·51		4	D	23	·04	**74**	5	Jr	21	·57	{7	F	20	·10
																										{1	Mr	21	·63
3	S	14	·82	5	O	14	·35	6	N	12	·89	1	D	12○	·41	**75**	2	Jr	10	·94		4	F	9	·47	6	Mr	11	·06
1	S	4	·19	2	O	3	·72	4	N	2	·25	5	D	1○	·78		7	D	31	·31	**76**	1	Jr	29	·84	3	F	28	·37
7	S	22	·08	1	O	21	·61	3	N	20○	·14	4	D	19	·67	**77**	6	Jr	18	·20		7	F	16	·74	2	Mr	18	·27
4	S:	11	·45	5	O	10	·98	7	N	9●	·51	2	D	9	·04	**78**	3	Jr	7	·57		5	F	6	·10	6	Mr	7	·63
1	Au	31	·82	3	S	30○	·35	4	O	29	·88	6	N	28	·41		7	D	27	·94	**79**	2	Jr	26	·47	4	F	25	·00
7	S	19○	·71	2	O	19	·24	3	N	17	·78	5	D	17	·31	**80**	6	Jr	15	·84		1	F	14	·37	2	Mr	14○	·90
5	S	8●○	·08	6	O	7	·61	1	N	6	·14	2	D	5	·67	**81**	4	Jr	4	·20		5	F	2○	·73	7	Mr	4	·26
2	Au	28	·45	3	S	26	·98	5	O	26	·51	7	N	25	·04		1	D	24	·57	**82**	3	Jr	23○	·10	4	F	21	·63
1	S	16	·35	2	O	15	·88	4	N	14	·41	5	D	13	·94	**83**	7	Jr	12○	·47		2	F	11	·00	3	Mr	12	·53
5	S	5	·71	7	O	5	·24	1	N	3	·77	3	D	3	·30	**84**	4	Jr	1●	·84		6	Jr	31	·37	7	F	29	·90
4	S	23	·61	6	O	23	·14	7	N	21○	·67	2	D	21●	·20	**85**	3	Jr	19	·73		5	F	18	·26	6	Mr	19	·79
1	S	12	·98	3	O	12	·51	5	N	11○	·04	6	D	10	·57	**86**	1	Jr	9	·10		2	F	7	·63	4	Mr	9	·16
6	S	2	·34	7	O	1	·88	2	O	31○	·41	3	N	29	·94		5	D	29	·47	**87**	7	Jr	28	·00	1	F	26	·53
5	S	21	·24	6	O	20	·77	1	N	19	·30	2	D	18	·83	**88**	4	Jr	17	·36		5	F	15	·90	7	Mr	16○	·43
2	S	9	·61	4	O	9●	·14	5	N	7	·67	7	D	7	·20	**89**	1	Jr	5	·73		3	F	4	·26	4	Mr	5○	·79
6	Au	29○	·98	1	S	28	·51	3	O	28	·04	4	N	26	·57		6	D	26	·10	**90**	7	Jr	24	·63	2	F	23○	·16
5	S	17	·87	7	O	17	·40	1	N	15	·94	3	D	15	·47	**91**	5	Jr	14	·00		6	F	12	·53	1	Mr	14	·06
3	S	7	·24	4	O	6	·77	6	N	5	·30	7	D	4	·83	**92**	2	Jr	3	·36		3	F	1●	·89	5	Mr	2	·42
7	Au	26	·61	{2	S	25	·14	**Margasira Kshaya**				5	N	23	·20		6	D	22○	·73	**93**	1	Jr	21	·26	{2	F	19	·79
				{3	O	24	·67																			{4	Mr	21	·32
6	S	14	·51	1	O	14	·04	2	N	12	·57	4	D	12○	·10	**94**	5	Jr	10	·63		7	F	9	·16	1	Mr	10	·69
3	S	3	·87	5	O	3	·40	6	N	1	·93	1	D	1●○	·46		3	D	31	·00	**95**	4	Jr	29	·53	6	F	28	·06
2	S	22	·77	4	O	22	·30	5	N	20●	·83	7	D	20	36	**96**	1	Jr	18	·89		3	F	17	·42	4	Mr	17	·95
7	S	11	·14	1	O	10○	·67	3	N	9	·20	4	D	8	·73	**97**	6	Jr	7	·26		7	F	5	·79	2	Mr	7	·32
4	Au	31	·50	6	S	30○	·04	7	O	29	·57	2	N	28	·10		3	D	27	·63	**98**	5	Jr	26	·16	6	F	24	·69
3	S	19○	·40	4	O	18	·93	6	N	17	·46	7	D	16	·99	**99**	2	Jr	15	·52		4	F	14	·06	5	Mr	15●	·59
7	S	8	·77	2	O	8	·30	3	N	6	·83	5	D	6	·36	**900**	6	Jr	4	·89		1	F	3○	·42	2	Mr	3	·95

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	**Vaisakha** ☉'s Anom col. 6 ☾'s Anom col. 7 Week-day	Month	Day	Fraction	**Jyeshta** + 29·53059 + 1·976 Week-day	Month	Day	Fraction	**Ashada** + 59·06117 + 3·952 Week-day	Month	Day	Fraction	**Sravana** + 88·59176 + 5·928 Week-day	Month	Day	Fraction	**Bhadrapada** + 118·12235 + 7·904 Week-day	Month	Day	Fraction
4001	957	822	21M	·8333	11·65384	3·138	**900**	3	4	Ap	2	·49	6	My	2	·02	7	My	31	·55	2	Je	30	·08	3	Jl	29○	·61
4002	958	823	22M	·0920	0·76328	26·850	**901**	5	1	Mr	22	·86	4	My	20	·92	6	Je	19	·45	7	Jl	18○	·98	2	Au	17	·51
									3	Ap	21	·39																
4003	959	824	22M	·3507	19·40129	24·984	**902**	6	7	Ap	10	·75	2	My	10	·28	3	Je	8	·82	5	Jl	8●	·35	6	Au	6	·88
4004	960	825	22M	·6094	8·50973	21·142	**903**	7	5	Mr	31	·12	6	Ap	29	·65	1	My	29○	·18	2	Je	27	·71	4	Jl	27	·24
																									5	Au	25	·77
4005	961	826	21M	·8680	27·14876	19·275	**904**	1	4	Ap	18	·02	5	My	17○	·55	7	Je	16	·08	1	Jl	15	·61	3	Au	14	·14
4006	962	827	22M	·1267	16·25719	15·433	**905**	3	1	Ap	7	·39	2	My	6●○	·92	4	Je	5	·45	5	Jl	4	·98	7	Au	3	·51
4007	963	828	22M	·3854	5·36563	11·591	**906**	4	5	Mr	27	·75	7	Ap	26●	·28	1	My	25	·81	3	Je	24	·34	6	Au	22	·41
																					4	Jl	23	·88				
4008	964	829	22M	·6441	24·00466	9·725	**907**	5	4	Ap	15	·65	6	My	15	·18	7	Je	13	·71	2	Jl	13	·24	3	Au	11	·77
4009	965	830	21M	·9028	13·11308	5·883	**908**	6	2	Ap	4	·02	3	My	3	·55	5	Je	2	·08	6	Jl	1	·61	1	Jl	31	·14
4010	966	831	22M	·1614	2·22152	2·040	**909**	1	6	Mr	24	·39	7	Ap	22	·92	3	Je	20	·98	5	Jl	20	·51	7	Au	19○	·04
													2	My	22	·45												
4011	967	832	22M	·4201	20·86055	0·174	**910**	2	5	Ap	12	·28	6	My	11	·81	1	Je	10	·34	2	Jl	9○	·87	4	Au	8	·40
4012	968	833	22M	·6788	9·96898	23·886	**911**	3	2	Ap	1	·65	4	My	1	·18	5	My	30	·71	7	Je	29○	·24	1	Jl	28	·77
4013	969	834	21M	·9375	28·60801	22·020	**912**	4	1	Ap	19	·55	3	My	19	·08	4	Je	17○	·61	6	Jl	17	·14	7	Au	15	·67
4014	970	835	22M	·1962	17·71644	18·178	**913**	6	5	Ap	8	·92	7	My	8	·44	1	Je	6●	·98	3	Jl	6	·51	5	Au	5	·04
4015	971	836	22M	·4549	6·82487	14·335	**914**	7	3	Mr	29	·28	4	Ap	27○	·81	6	My	27	·34	7	Je	25	·88	4	Au	24	·94
																					2	Jl	25	·40				
4016	972	837	22M	·7135	25·46390	12·469	**915**	1	2	Ap	17○	·18	3	My	16	·71	5	Je	15	·24	6	Jl	14	·77	1	Au	13	·30
4017	973	838	21M	·9722	14·57234	8·627	**916**	2	6	Ap	5●○	·55	1	My	5	·08	2	Je	3	·61	4	Jl	3	·14	5	Au	1	·67
4018	974	839	22M	·2309	3·68077	4·785	**917**	4	3	Mr	25	·91	5	Ap	24	·44	6	My	23	·97	3	Jl	22	·04	4	Au	20	·57
																	1	Je	22	·50								
4019	975	840	22M	·4896	22·31980	2·910	**918**	5	2	Ap	13	·81	4	My	13	·34	5	Je	11	·87	7	Jl	11	·40	2	Au	10○	·93
4020	976	841	22M	·7483	11·42823	26·631	**919**	6	7	Ap	3	·18	1	My	2	·71	3	Je	1	·24	4	Je	30	·77	6	Jl	30○	·30
4021	977	842	22M	·0069	0·53666	22·789	**920**	7	4	Mr	22	·54	7	My	20	·61	2	Je	19	·14	3	Jl	18●	·67	5	Au	17	·20
									6	Ap	21	·08																
4022	978	843	22M	·2656	19·17569	20·922	**921**	2	3	Ap	10	·44	4	My	9	·97	6	Je	8○	·50	1	Jl	8●	·03	2	Au	6	·56
4023	979	844	22M	·5243	8·28413	17·080	**922**	3	7	Mr	30	·81	2	Ap	29	·34	3	My	28○	·87	5	Je	27	·40	6	Jl	26	·93
																									1	Au	25	·46
4024	980	845	22M	·7830	26·92314	15·214	**923**	4	6	Ap	18	·71	1	My	18○	·24	2	Je	16	·77	4	Jl	16	·30	5	Au	14	·83
4025	981	846	22M	·0417	16·03158	11·372	**924**	5	4	Ap	7	·07	5	My	6	·60	7	Je	5	·14	1	Jl	4	·67	3	Au	3	·20
4026	982	847	22M	·3003	5·14002	7·529	**925**	7	1	Mr	27○	·44	2	Ap	25	·97	4	My	25	·50	7	Jl	23	·56	2	Au	22	·09
																	6	Je	24	·03								
4027	983	848	22M	·5590	23·77904	5·663	**926**	1	7	Ap	15	·34	1	My	14	·87	3	Je	13	·40	4	Jl	12	·93	6	Au	11	·46
4028	984	849	22M	·8177	12·88748	1·821	**927**	2	4	Ap	4	·71	6	My	4	·24	7	Je	2	·77	2	Jl	2	·30	3	Jl	31	·83
4029	985	850	22M	·0764	1·99592	25·533	**928**	3	2	Mr	24	·07	3	Ap	22	·60	6	Je	20	·66	1	Jl	20○	·20	2	Au	18●	·73
													5	My	22	·13												
4030	986	851	22M	·3351	20·63493	23·667	**929**	5	7	Ap	11	·97	2	My	11	·50	4	Je	10	·03	5	Jl	9○	·56	7	Au	8	·09
4031	987	852	22M	·5937	9·74337	19·822	**930**	6	5	Ap	1	·34	6	Ap	30	·87	1	My	30	·40	2	Je	28●○	·93	4	Jl	28	·46
4032	988	853	22M	·8524	28·38240	17·959	**931**	7	4	Ap	20	·24	5	My	19	·77	7	Je	18	·30	1	Jl	17	·83	3	Au	16	·36
4033	989	854	22M	·1111	17·49083	14·116	**932**	1	1	Ap	8	·60	3	My	8○	·13	4	Je	6	·66	6	Jl	6	·19	7	Au	4	·72
4034	990	855	22M	·3698	6·59927	10·274	**933**	3	5	Mr	28	·97	7	Ap	27○	·50	2	My	27	·03	3	Je	25	·56	6	Au	23	·62
																					5	Jl	25	·09				
4035	991	856	22M	·6285	25·23830	8·408	**934**	4	4	Ap	16○	·87	6	My	16	·40	7	Je	14	·93	2	Jl	14	·46	3	Au	12	·99
4036	992	857	22M	·8871	14·34672	4·565	**935**	5	2	Ap	6●	·23	3	My	5	·76	5	Je	4	·30	6	Jl	3	·83	1	Au	2	·36
4037	993	858	22M	·1458	3·45516	0·723	**936**	6	6	Mr	25	·60	1	Ap	24	·13	4	Je	22	·19	5	Jl	21	·72	7	Au	20○	·25
													2	My	23	·66												
4038	994	859	22M	·4045	22·09419	26·412	**937**	1	5	Ap	13	·50	1	My	13	·03	1	Je	11	·56	3	Jl	11	·09	4	Au	9○	·62
4039	995	860	22M	·6632	11·20292	22·570	**938**	2	2	Ap	2	·87	4	My	2	·40	5	My	31	·93	7	Je	30	·46	1	Jl	29	·99

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{+324·83647 / +354·36705}			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{+ 21·736 / + 23·712}			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	Au	28	·14	6	S	26	·67	1	O	26	·20	2	N	24	·73		4	D	24	·26	01	5	Jr	22●○	·80	7	F	21	·33
4	S	16	·04	5	O	15	·57	7	N	14	·10	1	D	13	·63	02	3	Jr	12	·16		4	F	10	·69	6	Mr	12	·22
1	S	5	·41	2	O	4	·94	4	N	3	·47	6	D	3○	·00	03	7	Jr	1	·53		2	Jr	31	·06	3	Mr	1	·59
7	S	24	·30	1	O	23	·84	3	N	22○	·37	4	D	21	·90	04	6	Jr	20	·43		7	F	18	·96	2	Mr	19	·49
4	S	12	·67	6	O	12	·20	7	N	10●○	·73	2	D	10	·26	05	3	Jr	8	·79		5	F	7	·32	6	Mr	8	·86
2	S	2	·04	3	O	1	·57	5	O	31	·10	6	N	29	·63		1	D	29	·16	06	2	Jr	27	·69	4	F	26	·22
7	S	20	·94	2	O	20	·47	4	N	19	·00	5	D	18	·53	07	7	Jr	17	·06		1	F	15	·59	3	Mr	17○	·12
5	S	10○	·30	6	O	9●	·83	1	N	8	·36	1	D	7	·90	08	4	Jr	6	·43		5	F	4	·96	7	Mr	5●○	·49
2	Au	29○	·67	4	S	28	·20	5	O	27	·73	7	N	26	·26		1	D	25	·79	09	3	Jr	24	·32	4	F	22	·85
1	S	17	·57	3	O	17	·10	4	N	15	·63	6	D	15	·16	10	7	Jr	13	·69		2	F	12	·22	3	Mr	13	·75
5	S	6	·94	6	O	6	·47	2	N	5	·00	3	D	4	·53	11	5	Jr	3○	·06		6	F	1●	·59	1	Mr	3	·12
{3	Au	27	·30	6	O	25	·36	7	N	23	·90	Pausha Kshaya					2	D	23○	·42	12	3	Jr	21	·96	{5	F	20	·49
{4	S	25	·84																							{7	Mr	21	·02
2	S	14	·20	3	O	13	·73	5	N	12	·26	6	D	11○	·79	13	1	Jr	10	·32		2	F	8	·86	4	Mr	10	·29
6	S	3	·57	1	O	3	·10	2	N	1	·63	4	D	1	·16		5	D	30	·69	14	7	Jr	29	·22	1	F	27	·75
5	S	22	·46	7	O	22○	·00	1	N	20●	·53	3	D	20	·06	15	4	Jr	18	·62		6	F	17	·12	7	Mr	18	·65
2	S	11	·83	4	O	11○	·36	5	N	9	·90	7	D	9	·42	16	1	Jr	7	·96		3	F	6	·48	5	Mr	7	·02
7	Au	31	·20	1	S	29○●	·73	3	O	29	·26	4	N	27	·79		6	D	27	·32	17	7	Jr	25	·85	2	F	24	·38
6	S	19●	·10	7	O	18	·63	2	N	17	·16	3	D	16	·69	18	5	Jr	15	·22		6	F	13○	·75	1	Mr	15	·28
3	S	8●	·46	4	O	7	·99	6	N	6	·52	1	D	6	·06	19	1	Jr	4	·59		4	F	3○	·12	5	Mr	4	·65
7	Au	28	·83	2	S	27	·36	3	O	26	·89	5	N	25	·42		6	D	24	·95	20	1	Jr	23●	·48	3	F	22	·01
6	S	15	·73	1	O	15	·26	2	N	13	·79	4	D	13○	·32	21	5	Jr	11●	·85		7	F	10	·38	1	Mr	11	·91
4	S	5	·10	5	O	4	·63	7	N	3	·16	1	D	2○	·69	22	3	Jr	1	·22		4	Jr	30	·75	6	Mr	1	·28
3	S	24	·00	4	O	23	·53	6	N	22○	·05	7	D	21	·58	23	2	Jr	20	·12		3	F	18	·65	5	Mr	20	·18
7	S	13	·36	1	O	12	·89	3	N	11●	·42	4	D	10	·95	24	6	Jr	9	·48		1	F	8	·01	2	Mr	8	·54
4	S	1	·73	6	O	1	·26	7	O	30	·79	2	N	29	·32		3	D	28	·85	25	5	Jr	27	·38	6	F	25	·91
3	S	20○	·62	5	O	20	·16	6	N	18	·69	1	D	18	·22	26	2	Jr	16	·75		4	F	15	·28	5	Mr	16○	·81
7	S	9○	·99	2	O	9	·52	4	N	8	·05	5	D	7	·58	27	7	Jr	6	·11		1	F	4	·64	3	Mr	6●	·18
5	Au	30●○	·36	6	S	28	·89	1	O	28	·42	2	N	26	·95		4	D	26	·48	28	6	Jr	25	·01	7	F	23●	·54
4	S	17	·26	5	O	16	·79	7	N	15	·32	1	D	14	·85	29	3	Jr	13○	·38		4	F	11	·91	6	Mr	13	·44
1	S	6	·62	3	O	6	·15	4	N	4	·68	6	D	4	·22	30	7	Jr	2○	·75		2	F	1	·28	3	Mr	2	·81
{5	Au	26	·99	2	O	25	·05	3	N	23	·58	5	D	23○	·11	31	6	Jr	21	·64		1	F	20	·17	2	Mr	21	·70
{7	S	25	·52																										
4	S	14	·89	6	O	14	·42	7	N	12	·95	2	D	12●	·57	32	4	Jr	11	·01		5	F	9	·54	7	Mr	10	·07
2	S	3	·26	3	O	2	·79	5	N	1○	·32	6	N	30	·85		1	D	30	·38	33	2	Jr	28	·91	4	F	27	·44
1	S	22	·15	2	O	21○	·69	4	N	20	·21	5	D	19	·74	34	7	Jr	18	·28		1	F	16	·81	3	Mr	18	·34
5	S	11	·52	7	O	11○	·05	1	N	9	·58	3	D	9	·11	35	4	Jr	7	·64		6	F	6	·17	7	Mr	7	·70
2	Au	31	·89	4	S	30●	·42	5	O	29	·95	7	N	28	·48		2	D	28	·01	36	3	Jr	26	·54	5	F	25○	·07
1	S	18●	·78	3	O	18	·32	4	N	16	·85	6	D	16	·38	37	7	Jr	14	·91		2	F	13●○	·44	3	Mr	14	·97
6	S	8	·15	7	O	7	·68	2	N	6	·21	3	D	5	·74	38	5	Jr	4	·27		6	F	2●○	·80	1	Mr	4	·34
3	Au	28	·52	5	S	27	·05	6	O	26	·58	1	N	25	·11		2	D	24○	·64	39	4	Jr	23●	·17	5	F	21	·70

TABLE X—

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year: Month and day A.D.	Commencement of Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Week-day of 1st January	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4040	996	861	22M	·9219	0·31105	18·727	**939**	3	7	Mr	23	·23	3	My	21	·29	4	Je	19○	·82	6	Jl	19●	·36	7	Au	17	·89
									1	Ap	21	·76																
4041	997	862	22M	·1805	18·95008	16·861	**940**	4	6	Ap	10	·13	7	My	9	·66	2	Je	8○	·19	3	Jl	7●	·72	5	Au	6	·25
4042	998	863	22M	·4392	8·05851	13·019	**941**	6	3	Mr	30	·50	5	Ap	29	·03	6	My	28○	·56	1	Je	27	·09	2	Jl	26	·62
																									4	Au	25	·15
4043	999	864	22M	·6979	26·69754	11·152	**942**	7	2	Ap	18	·40	3	My	17●	·93	5	Je	16	·46	6	Jl	15	·99	1	Au	14	·52
4044	1000	865	22M	·9566	15·80598	7·310	**943**	1	6	Ap	7○	·76	1	My	7●	·29	2	Je	5	·82	4	Jl	5	·35	5	Au	3	·88
4045	1001	866	22M	·2153	4·91441	3·468	**944**	2	4	Mr	27○	·13	5	Ap	25	·67	7	My	25	·19	3	Jl	23	·25	4	Au	21	·78
																	1	Je	23	·72								
4046	1002	867	22M	·4739	23·55343	1·601	**945**	4	3	Ap	15	·83	4	My	14	·56	6	Je	13	·09	7	Jl	12	·62	2	Au	11	·15
4047	1003	868	22M	·7326	12·66187	25·314	**946**	5	7	Ap	4	·39	1	My	3	·92	3	Je	2	·46	4	Jl	1	·99	6	Jl	31	·52
4048	1004	869	22M	·9913	1·77030	21·472	**947**	6	4	Mr	24	·76	6	Ap	23	·29	2	Je	21	·35	3	Jl	20○	·88	5	Au	19	·41
													7	My	22	·82												
4049	1005	870	22M	·2500	20·40933	19·605	**948**	7	3	Ap	11	·66	5	My	11	·19	6	Je	9	·72	1	Jl	9●○	·25	7	Au	7	·78
4050	1006	871	22M	·5087	9·51777	15·763	**949**	2	1	Ap	1	·03	2	Ap	30	·56	4	My	30	·09	5	Je	28●	·62	7	Jl	28	·15
4051	1007	872	22M	·7674	28·15678	13·896	**950**	3	6	Ap	19	·92	1	My	19○	·45	2	Je	17●	·98	4	Ji	17	·52	6	Au	16	·05
4052	1008	873	23M	·0260	17·26522	10·055	**951**	4	4	Ap	9	·29	5	My	8○	·82	6	Je	7	·35	1	Jl	6	·88	3	Au	5	·41
4053	1009	874	22M	·2847	6·37366	6·212	**952**	5	1	Mr	28	·66	3	Ap	27●○	·19	4	My	26	·72	6	Je	25	·25	2	Au	23	·31
																					7	Jl	24	·78				
4054	1010	875	22M	·5434	25·01368	4·346	**953**	7	7	Ap	16●	·56	2	My	16	·09	3	Je	14	·62	5	Jl	14	·15	6	Au	12	·68
4055	1011	876	22M	·8021	14·12112	0·504	**954**	1	4	Ap	5	·92	6	My	5	·45	7	Je	3	·98	2	Jl	3	·51	4	Au	2	·04
4056	1012	877	23M	·0608	3·22955	24·216	**955**	2	2	Mr	26	·29	3	Ap	24	·82	6	Je	22	·88	1	Jl	22	·41	2	Au	20○	·94
													5	My	24	·35												
4057	1013	878	22M	·3194	21·86858	22·350	**956**	3	1	Ap	13	·19	2	My	12	·72	4	Je	11	·25	5	Jl	10	·78	7	Au	9	·31
4058	1014	879	22M	·5781	10·97701	18·508	**957**	5	5	Ap	2	·55	7	My	2	·08	1	My	31	·62	3	Je	30	·15	4	Jl	29	·68
4059	1015	880	22M	·8368	0·08538	14·665	**958**	6	2	Mr	22	·92	5	My	20	·98	7	Je	19○	·51	2	Jl	19●	·04	3	Au	17	·57
									4	Ap	21	·45																
4060	1016	881	23M	·0955	18·72508	12·800	**959**	7	1	Ap	10	·82	3	My	10	·35	4	Je	8●○	·88	6	Jl	8	·41	7	Au	6	·94
4061	1017	882	22M	·3542	7·83291	8·957	**960**	1	6	Mr	30	·19	7	Ap	28	·72	2	My	28●	·25	3	Je	26	·78	5	Jl	26	·31
																									6	Au	24	·84
4062	1018	883	22M	·6128	26·47194	7·101	**961**	3	5	Ap	18○	·08	6	My	17●	·61	1	Je	16	·14	2	Jl	15	·68	4	Au	14	·21
4063	1019	884	22M	·8715	15·58037	3·248	**962**	4	2	Ap	7○	·45	3	My	6	·98	5	Je	5	·51	7	Jl	5	·04	1	Au	3	·57
4064	1020	885	23M	·1302	4·68880	26·961	**963**	5	6	Mr	27○	·82	1	Ap	26	·35	2	My	25	·88	5	Jl	23	·94	7	Au	22	·47
																	4	Je	24	·41								
4065	1021	886	22M	·3889	23·32783	25·094	**964**	7	5	Ap	14	·72	7	My	14	·25	1	Je	12	·78	3	Jl	12	·31	4	Au	10	·84
4066	1022	887	22M	·6476	12·43627	21·252	**965**	1	3	Ap	4	·08	4	My	3	·61	6	Je	2	·14	7	Jl	1	·67	2	Jl	31○	·20
4067	1023	888	22M	·9062	1·54469	17·410	**966**	2	7	Mr	24	·45	1	Ap	22	·98	5	Je	21	·04	6	Jl	20○	·57	1	Au	19	·10
													3	My	22	·51												
4068	1024	889	23M	·1649	20·18373	15·544	**967**	3	6	Ap	12	·35	7	My	11	·88	2	Je	10	·41	3	Jl	9●	·94	5	Au	8	·47
4069	1025	890	22M	·4236	9·29216	11·701	**968**	4	3	Mr	31	·71	5	Ap	30	·24	6	My	29○	·78	1	Je	28	·31	2	Jl	27	·84
4070	1026	891	22M	·6823	27·93118	9·835	**969**	6	2	Ap	19	·61	4	My	19○	·14	5	Je	17	·67	7	Jl	17	·20	1	Au	15	·73
4071	1027	892	22M	·9410	17·03962	5·993	**970**	7	6	Ap	8	·98	1	My	8●○	·51	3	Je	7	·04	4	Jl	6	·57	6	Au	5	·10
4072	1028	893	23M	·1996	6·14815	2·151	**971**	1	4	Mr	29	·35	5	Ap	27	·88	7	My	27	·41	1	Je	25	·94	5	Au	24	·00
																					3	Jl	25	·47				
4073	1029	894	22M	·4583	24·78707	0·284	**972**	2	3	Ap	16●	·24	4	My	15	·77	6	Je	14	·30	7	Jl	13	·84	2	Au	12	·37
4074	1030	895	22M	·7170	13·89551	23·997	**973**	4	7	Ap	5	·61	2	My	5	·14	3	Je	3	·67	5	Jl	3	·20	6	Au	1	·73
4075	1031	896	22M	·9757	3·00395	20·154	**974**	5	4	Mr	25	·98	6	Ap	24	·51	2	Je	22	·57	4	Jl	22	·10	5	Au	20●	·63
													1	My	24	·04												
4076	1032	897	23M	·2344	21·64287	18·288	**975**	6	3	Ap	13	·88	5	My	13	·41	6	Je	11	·94	1	Jl	11	·47	3	Au	10●	·00
4077	1033	898	22M	·4930	10·75140	14·446	**976**	7	1	Ap	2	·24	2	My	1	·77	4	My	31	·30	5	Je	29○	·83	7	Jl	29	·36

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Arya Siddhanta.

Asvina			Kartika			Margasira			Pausha			A.D.	Magha			A.D.	Phalguna			Chaitra		
+ 147·65293			+ 177·18353			+ 206·71411			+ 236·24470				+ 265·77529				+ 295·30588			{ +324·83647 { +354·36705		
+ 9·880			+ 11·856			+ 13·832			+ 15·808				+ 17·784				+ 19·760			{ + 21·736 { + 23·712		
Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction		Week-day Month	Day	Fraction		Week-day Month	Day	Fraction	Week-day Month	Day	Fraction
2 S	16	·42	3 O	15	·95	5 N	14	·48	7 D	14○	·01	**40**	1 Jr	12	·54		3 F	11	·07	4 Mr	11	·60
6 S	4	·78	1 O	4	·31	2 N	2	·84	4 D	2○	·38		5 D	31	·91	**41**	7 Jr	30	·44	1 F	28	·97
5 S	23	·68	7 O	23	·21	1 N	21	·74	3 D	21	·27	**42**	4 Jr	19	·80		6 F	18	·33	7 Mr	19	·86
3 S	13	·05	4 O	12	·58	6 N	11●	·11	7 D	10	·64	**43**	2 Jr	9	·17		3 F	7	·70	5 Mr	9	·23
7 S	2	·42	1 O	1○	·95	3 O	31	·48	5 N	30	·01		6 D	29	·54	**44**	1 Jr	28	·07	2 F	26	·60
6 S	20●○	·31	7 O	19	·84	2 N	18	·37	3 D	17	·90	**45**	5 Jr	16	·44		6 F	14	·96	1 Mr	16	·50
3 S	9●○	·68	5 O	9	·21	6 N	7	·74	1 D	7	·27	**46**	2 Jr	5	·80		4 F	4	·33	5 Mr	5●	·86
1 Au	30	·05	2 S	28	·58	4 O	28	·11	5 N	26	·64		7 D	26	·17	**47**	1 Jr	24○	·70	3 F	23	·23
6 S	17	·94	1 O	17	·48	3 N	16	·01	4 D	15	·54	**48**	6 Jr	14○	·07		7 F	12	·60	2 Mr	13	·13
4 S	6	·31	5 O	5	·84	7 N	4	·37	1 D	3	·90	**49**	3 Jr	2○	·43		4 Jr	31	·96	6 Mr	2	·50
{ 1 Au	26	·68	4 O	24	·74	6 N	23	·27	7 D	22●	·80	**50**	2 Jr	21	·33		3 F	19	·86	5 Mr	21	·39
{ 3 S	25	·21																				
7 S	14	·58	2 O	14	·11	3 N	12○	·64	8 D	12	·17	**51**	6 Jr	10	·70		1 F	9	·23	2 Mr	10	·76
4 S	3	·94	6 O	3	·47	1 N	2○	·00	2 D	1	·54		4 D	31	·07	**52**	5 Jr	29	·60	7 F	28	·13
3 S	21	·84	5 O	21○	·37	6 N	19	·90	1 D	19	·43	**53**	2 Jr	17	·96		4 F	16	·49	6 Mr	18	·02
1 S	11	·21	2 O	10	·74	4 N	9	·27	5 D	8	·80	**54**	7 Jr	7	·33		1 F	5	·86	3 Mr	7○	·39
5 Au	31○	·58	7 S	30	·11	1 O	29	·64	3 N	28	·17		4 D	27	·70	**55**	6 Jr	26	·23	7 F	24●○	·76
4 S	19	·47	6 O	19	·00	7 N	17	·53	2 D	17	·06	**56**	3 Jr	15	·60		5 F	14○	·13	6 Mr	14	·06
1 S	7	·84	3 O	7	·37	4 N	5	·90	6 D	5	·43	**57**	7 Jr	3○	·96		2 F	2	·49	4 Mr	4	·02
6 Au	28	·21	7 S	26	·74	2 O	26	·27	3 N	24	·80		5 D	24○	·33	**58**	6 Jr	22	·86	1 F	21	·39
5 S	16	·10	6 O	15	·64	1 N	14	·17	2 D	13●○	·70	**59**	4 Jr	12	·23		5 F	10	·76	7 Mr	12	·29
2 S	5	·47	4 O	5	·00	5 N	3	·53	7 D	3	·06	**60**	1 Jr	1	·59		3 Jr	31	·12	4 F	29	·66
1 S	23	·37	2 O	22	·90	4 N	21	·43	5 D	20	·96	**61**	7 Jr	19	·49		2 F	18	·02	3 Mr	19	·55
5 S	12	·74	7 O	12○	·27	1 N	10	·80	3 D	10	·33	**62**	4 Jr	8	·86		6 F	7	·39	7 Mr	8	·92
3 S	2	·10	4 O	1○	·63	6 O	31	·16	7 N	29	·70		2 D	29	·23	**63**	3 Jr	27	·76	5 F	26	·29
2 S	21○	·00	3 O	20	·53	5 N	19	·06	6 D	18	·59	**64**	1 Jr	17	·12		2 F	15	·65	4 Mr	16	·18
6 S	9	·37	7 O	8	·90	2 N	7	·43	3 D	6	·96	**65**	5 Jr	5	·49		7 F	4○	·02	1 Mr	5●	·55
3 Au	29	·74	5 S	28	·27	6 O	27	·80	1 N	26	·33		2 D	25	·86	**66**	4 Jr	24○	·39	6 F	22	·92
2 S	17	·83	4 O	17	·16	5 N	15	·69	7 D	15	·22	**67**	1 Jr	13○	·76		3 F	12	·29	4 Mr	13	·82
7 S	7	·00	1 O	6	·53	3 N	5	·06	4 D	4	·59	**68**	6 Jr	3	·12		7 F	1	·65	2 Mr	2	·18
{ 4 Au	26	·37	7 O	24	·43	1 N	22○	·96	3 D	22●	·49	**69**	5 Jr	21	·02		6 F	19	·55	1 Mr	21	·08
{ 5 S	24	·90																				
3 S	14	·26	4 O	13	·80	6 N	12○	·33	7 D	11	·87	**70**	2 Jr	10	·39		3 F	8	·92	5 Mr	10	·45
7 S	3	·63	2 O	3	·16	3 N	1●○	·69	5 D	1	·22		6 D	30	·75	**71**	1 Jr	29	·28	2 F	27	·82
6 S	22	·53	1 O	22●	·06	2 N	20	·56	4 D	20	·12	**72**	5 Jr	18	·65		7 F	17	·18	1 Mr	17○	·71
3 S	10○	·90	5 O	10●	·43	7 N	8	·96	1 D	8	·49	**73**	3 Jr	7	·02		4 F	5	·55	6 Mr	7○	·08
1 Au	31○	·26	2 S	29	·79	4 O	29	·32	5 N	27	·86		7 D	27	·39	**74**	1 Jr	25	·92	3 F	24●○	·45
7 S	19	·16	1 O	18	·69	3 N	17	·22	4 D	16	·75	**75**	6 Jr	15	·28		7 F	13●	·81	2 Mr	15	·34
4 S	8	·53	6 O	8	·06	7 N	6	·59	2 D	6	·12	**76**	3 Jr	4○	·65		5 F	3	·18	6 Mr	3	·71
1 Au	27	·90	3 S	26	·43	4 O	25	·96	6 N	24	·49		1 D	24○	·02	**77**	2 Jr	22	·55	{ 4 F	21	·08
																				{ 5 Mr	22	·61

TABLE X—

									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						**Vaisakha**				**Jyeshta**				**Ashada**				**Sravana**				**Bhadrapada**			
Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	**A. D.**	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4078	1034	899	22M	·7517	29·39043	12·580	**977**	2	7	Ap	21	·14	1	My	20	·67	3	Je	19○	·20	4	Jl	18	·73	6	Au	17	·26
4079	1035	900	23M	·0104	18·49886	8·737	**978**	3	4	Ap	10	·51	6	My	10	·04	7	Je	8●	·57	2	Jl	8	·10	3	Au	6	·63
4080	1036	901	23M	·2691	7·60730	4·895	**979**	4	1	Mr	30	·87	3	Ap	29○	·40	4	My	28	·94	6	Je	27	·47	2	Au	25	·53
																					1	Jl	27	·00				
4081	1037	902	22M	·5278	26·24633	3·029	**980**	5	7	Ap	17○	·77	2	My	17●	·30	3	Je	15	·83	5	Jl	15	·36	6	Au	13	·89
4082	1038	903	22M	·7864	15·35476	26·741	**981**	7	5	Ap	7●○	·14	6	My	6	·67	1	Je	5	·20	2	Jl	4	·73	4	Au	3	·26
4083	1039	904	23M	·0451	4·46319	22·899	**982**	1	2	Mr	27●	·51	4	Ap	26	·04	5	My	25	·57	1	Jl	23	·63	3	Au	22	·16
																	7	Je	24	·10								
4084	1040	905	23M	·3038	23·10222	21·033	**983**	2	1	Ap	15	·40	2	My	14	·93	4	Je	13	·46	6	Jl	13	·00	7	Au	11○	·53
4085	1041	906	22M	·5625	12·21065	17·190	**984**	3	5	Ap	3	·77	7	My	3	·30	1	Je	1	·83	3	Jl	1	·36	4	Jl	30○●	·89
4086	1042	907	22M	·8212	1·31909	13·348	**985**	5	3	Mr	24	·14	4	Ap	22	·69	7	Je	20	·73	2	Jl	20○	·26	3	Au	18	·79
													6	My	22	·20												
4087	1043	908	23M	·0799	19·95812	11·482	**986**	6	2	Ap	12	·03	3	My	11	·58	5	Je	10○	·10	6	Jl	9	·63	1	Au	8	·16
4088	1044	909	23M	·3385	9·06654	7·640	**987**	7	6	Ap	1	·40	7	Ap	30	·93	2	My	30○	·46	3	Je	28	·99	5	Jl	28	·52
4089	1045	910	22M	·5972	27·70557	5·773	**988**	1	5	Ap	19	·30	6	My	18●○	·83	1	Je	17	·36	2	Jl	16	·89	4	Au	15	·42
4090	1046	911	22M	·8559	16·81401	1·931	**989**	3	2	Ap	8	·67	4	My	8●	·20	5	Je	6	·73	7	Jl	6	·26	1	Au	4	·79
4091	1047	912	23M	·1146	5·92244	25·643	**990**	4	7	Mr	29○	·03	1	Ap	27	·56	3	My	27	·09	4	Je	25	·62	7	Au	23	·69
																					6	Jl	25	·16				
4092	1048	913	23M	·3733	24·56147	23·777	**991**	5	5	Ap	16	·93	7	My	16	·46	1	Je	14	·99	3	Jl	14	·52	5	Au	13	·05
4093	1049	914	22M	·6319	13·66991	19·935	**992**	6	3	Ap	5	·30	4	My	4	·83	6	Je	3	·36	7	Jl	2	·89	2	Au	1	·42
4094	1050	915	22M	·8906	2·77833	16·093	**993**	1	7	Mr	25	·66	2	Ap	24	·20	5	Je	22	·26	6	Jl	21	·79	1	Au	20●	·32
													3	My	23	·73												
4095	1051	916	23M	·1493	21·41764	14·227	**994**	2	6	Ap	13	·56	1	My	13	·10	1	Je	11	·62	4	Jl	11○	·15	5	Au	9	·68
4096	1052	917	23M	·4080	10·52511	10·385	**995**	3	3	Ap	2	·93	5	My	2	·46	6	My	31	·99	1	Je	30○	·52	3	Jl	30	·05
4097	1053	918	22M	·6667	29·16482	8·518	**996**	4	2	Ap	20	·83	4	My	20	·36	5	Je	18	·89	7	Jl	18	·42	1	Au	16	·95
4098	1054	919	22M	·9253	18·27326	4·676	**997**	6	7	Ap	10	·19	1	My	9○	·72	3	Je	8	·26	4	Jl	7	·79	6	Au	6	·32
4099	1055	920	23M	·1840	7·38169	0·833	**998**	7	4	Mr	30	·56	6	Ap	29○	·09	7	My	28	·62	2	Je	27	·15	5	Au	25	·21
																					3	Jl	26	·68				
4100	1056	921	23M	·4427	26·02072	26·522	**999**	1	3	Ap	18○	·46	4	My	17	·99	6	Je	16	·52	1	Jl	16	·05	2	Au	14	·58

N.B.—For Surya Siddhanta figures for **A.D. 500** to **A.D. 999** see pages **76—79** below.

Ārya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{+ 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
7	S	15	·79	2	O	15	·32	3	N	13	·85	5	D	13●	·39	**78**	6	Jr	11	·91		1	F	10	·45	2	Mr	11	·98
5	S	5	·16	6	O	4	·69	1	N	3	·22	2	D	2●	·75	**79**	4	Jr	1	·28		5	Jr	30	·81	7	Mr	1	·34
4	S	24	·06	5	O	23○	·59	7	N	22	·12	1	D	21	·65	**80**	3	Jr	20	·18		4	F	18	·71	6	Mr	19	·24
1	S	12	·42	2	O	11○	·96	4	N	10	·49	6	D	10	·02	**81**	7	Jr	8	·55		2	F	7	·08	3	Mr	8	·61
5	S	1	·79	7	O	1○	·32	1	O	30	·85	3	N	29	·38		4	D	28	·91	**82**	6	Jr	27	·44	7	F	25	·98
4	S	20●	·69	6	O	20	·22	7	N	18	·75	2	D	18	·28	**83**	3	Jr	16	·81		5	F	15○	·34	6	Mr	16	·87
2	S	10	·06	3	O	9	·59	5	N	8	·12	6	D	7	·65	**84**	1	Jr	6	·18		2	F	4○	·71	4	Mr	5	·24
6	Au	29	·42	7	S	27	·95	2	O	27	·48	4	N	26	·02		5	D	25	·55	**85**	7	Jr	24○	·08	1	F	22	·61
5	S	17	·32	6	O	16	·85	1	N	15	·38	2	D	14	·91	**86**	4	Jr	13●	·44		5	F	11	·97	7	Mr	13	·50
2	S	6	·69	4	O	6	·22	5	N	4	·75	7	D	4○	·28	**87**	1	Jr	2	·81		3	F	1	·34	4	Mr	2	·87
{7	Au	27	·05	3	O	25	·12	4	N	23○	·65	6	D	23	·18	**88**	7	Jr	21	·71		2	F	20	·24	3	Mr	20	·77
{1	S	25	·58																										
5	S	13	·96	7	O	13	·48	2	N	12●○	·01	3	D	11	·54	**89**	5	Jr	10	·07		6	F	8	·60	1	Mr	10	·14
3	S	3	·32	4	O	2	·84	6	N	1●	·31	7	N	30	·91		2	D	30	·44	**90**	3	Jr	28	·97	5	F	27	·50
2	S	22○	·22	3	O	21●	·75	5	N	20	·28	6	D	19	·81	**91**	1	Jr	18	·34		2	F	16	·87	4	Mr	18●○	·40
6	S	11○	·58	1	O	11	·11	2	N	9	·64	4	D	9	·18	**92**	5	Jr	7	·71		7	F	6	·24	1	Mr	6●○	·77
3	Au	30○	·95	5	S	29	·48	7	O	29	·01	1	N	27	·54		3	D	27	·07	**93**	4	Jr	25	·60	6	F	24●	·13
2	S	18	·85	4	O	18	·38	5	N	16	·91	7	D	16	·44	**94**	1	Jr	14○	·97		3	F	13	·50	5	Mr	15	·03
7	S	8	·22	1	O	7	·75	3	N	6	·28	4	D	5	·81	**95**	6	Jr	4●○	·34		5	F	2	.87	2	Mr	4	40
4	Au	28	·58	6	S	27	·11	7	O	26	·64	2	N	25	·17		3	D	24	·70	**96**	5	Jr	23	·24	{6	F	21	·77
																										{1	Mr	22	·30
3	S	15	·48	5	O	15	·01	6	N	13	·54	1	D	13●	·07	**97**	2	Jr	11	·60		4	F	10	·13	5	Mr	11	·66
7	S	4	·85	2	O	4	·38	3	N	2○	·91	5	D	2	·44		6	D	31	·97	**98**	1	Jr	30	·50	3	Mr	1	·03
6	S	23	·74	1	O	23●○	·28	2	N	21	·81	4	D	21	·34	**99**	5	Jr	19	·87		7	F	18	·40	1	Mr	19	·93
4	S	13	·11	5	O	12●○	·64	7	N	11	·17	1	D	10	·70	**10**	3	Jr	9	·23	**00**	4	F	7	·76	6	Mr	8	·30

SURYA SIDDHANTA figures

A.D.	Kaliyuga	Week day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
500	3601	7	18M	·3613	27·3063	9·979
501	3602	1	18M	·6200	16·4146	6·137
502	3603	2	18M	·8788	5·5229	2·294
503	3604	4	19M	·1375	24·1618	0·427
504	3605	5	18M	·3963	13·2701	24·139
505	3606	6	18M	·6550	2·3784	20·296
506	3607	7	18M	·9138	21·0173	18·429
507	3608	2	19M	·1726	10·1256	14·587
508	3609	3	18M	·4313	28·7644	12·720
509	3610	4	18M	·6901	17·8727	8·877
510	3611	5	18M	·9488	6·9810	5·034
511	3612	7	19M	·2076	25·6199	3·168
512	3613	1	18M	·4663	14·7282	26·880
513	3614	2	18M	·7251	3·8365	23·037
514	3615	3	18M	·9869	22·4754	21·170
515	3616	5	19M	·2426	11·5837	17·327
516	3617	6	18M	·5014	0·6920	13·485
517	3618	7	18M	·7601	19·3309	11·618
518	3619	2	19M	·0189	8·4392	7·775
519	3620	3	19M	·2776	27·0781	5·908
520	3621	4	18M	·5364	16·1864	2·066
521	3622	5	18M	·7952	5·2947	25·777
522	3623	7	19M	·0569	23·9336	23·911
523	3624	1	19M	·3127	13·0419	20·068
524	3625	2	18M	·5714	2·1502	16·225
525	3626	3	18M	·8302	20·7891	14·358
526	3627	5	19M	·0889	9·8974	10·516
527	3628	6	19M	·3477	28·5362	8·649
528	3629	7	18M	·6065	17·6445	4·806
529	3630	1	18M	·8652	6·7528	0·963
530	3631	3	19M	·1240	25·3917	26·651
531	3632	4	19M	·3827	14·5000	22·809
532	3633	5	18M	·6415	3·6083	18·966
533	3634	6	18M	·9002	22·2472	17·099
534	3635	1	19M	·1590	11·3555	13·256
535	3636	2	19M	·4177	0·4638	9·414
536	3637	3	18M	·6765	19·1027	7·547
537	3638	4	18M	·9353	8·2110	3·704
538	3639	6	19M	·1940	26·8499	1·837
539	3640	7	19M	·4518	15·9582	25·549
540	3641	1	18M	·7115	5·0665	21·706
541	3642	2	18M	·9703	23·7054	19·840
542	3643	4	19M	·2290	12·8137	15·997
543	3644	5	19M	·4868	1·9220	12·154
544	3645	6	18M	·7466	20·5608	10·2[illegible]7 (8)
545	3646	1	19M	·0053	9·6691	6·445
546	3647	2	19M	·2641	28·3080	4·578
547	3648	3	19M	·5228	17·4163	0·735
548	3649	4	18M	·7816	6·5246	24·447
549	3650	6	19M	·0403	25·1635	22·580

A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
550	3651	7	19M	·2991	14·2718	18·737
551	3652	1	19M	·5579	3·3801	14·894
552	3653	2	18M	·8166	22·0190	13·028
553	3654	4	19M	·0754	11·1273	9·185
554	3655	5	19M	·3341	0·2356	5·343
555	3656	6	19M	·5929	18·8745	3·476
556	3657	7	18M	·8516	7·9828	27·188
557	3658	2	19M	·1104	26·6217	25·321
558	3659	3	19M	·3692	15·7300	21·478
559	3660	4	19M	·6279	4·8383	17·635
560	3661	5	18M	·8867	23·4772	15·769
561	3662	7	19M	·1454	12·5854	11·926
562	3663	1	19M	·4042	1·6937	8·083
563	3664	2	19M	·6629	20·3326	6·216
564	3665	3	18M	·9217	9·4409	2·374
565	3666	5	19M	·1805	28·0798	0·507
566	3667	6	19M	·4392	17·1881	24·219
567	3668	7	19M	·6980	6·2964	20·376
568	3669	1	18M	·9567	24·9353	18·509
569	3670	3	19M	·2155	14·0436	14·666
570	3671	4	19M	·4742	3·1519	10·824
571	3672	5	19M	·7330	21·7908	8·957
572	3673	6	18M	·9918	10·8991	5·114
573	3674	1	19M	·2505	0·0074	1·271
574	3675	2	19M	·5093	18·6463	26·959
575	3676	3	19M	·7680	7·7546	23·117
576	3677	5	19M	·0268	26·3935	21·250
577	3678	6	19M	·2855	15·5018	17·407
578	3679	7	19M	·5443	4·6101	13·564
579	3680	1	19M	·8031	23·2489	11·698
580	3681	3	19M	·0618	12·3572	7·855
581	3682	4	19M	·3206	1·4655	4·013
582	3683	5	19M	·5793	20·1044	2·145
583	3684	6	19M	·8381	9·2127	25·857
584	3685	1	19M	·0958	27·8516	23·990
585	3686	2	19M	·3556	16·9599	20·148
586	3687	3	19M	[illegible]143	6·0682	16·305
587	3688	4	19M	[illegible]731	24·7071	14·438
588	3689	6	19M	·1319	13·8154	10·595
589	3690	7	19M	·3906	2·9237	6·753
590	3691	1	19M	·6494	21·5626	4·886
591	3692	2	19M	·9081	10·6709	1·043
592	3693	4	19M	·1669	29·8098	26·731
593	3694	5	19M	·4256	18·4181	22·888
594	3695	6	19M	·6844	7·5264	19·045
595	3696	7	19M	·9432	26·1653	17·179
596	3697	2	19M	·2019	15·2736	13·336
597	3698	3	19M	·4607	4·3819	9·493
598	3699	4	19M	·7194	23·0207	7·627
599	3700	5	19M	·9782	12·1290	3·784

A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day
600	3701	7	19M	·2369
601	3702	1	19M	4957
602	3703	2	19M	·7545
603	3704	4	20M	·0132
604	3705	5	19M	·2720
605	3706	6	19M	·5307
606	3707	7	19M	·7895
607	3708	2	20M	·0482
608	3709	3	19M	·3070
609	3710	4	19M	·5658
610	3711	5	19M	·8245
611	3712	7	20M	·0833
612	3713	1	19M	·3420
613	3714	2	19M	·6008
614	3715	3	19M	·8595
615	3716	5	20M	·1183
616	3717	6	19M	·3771
617	3718	7	19M	·6358
618	3719	1	19M	·8946
619	3720	3	20M	·1533
620	3721	4	19M	4121
621	3722	5	19M	·6708
622	3723	6	19M	·9296
623	3724	1	20M	·1884
624	3725	2	19M	·4471
625	3726	3	19M	·7059
626	3727	4	19M	·9646
627	3728	6	20M	·2234
628	3729	7	19M	·4821
629	3730	1	19M	·7409
630	3731	2	19M	·9996
631	3732	4	20M	·2584
632	3733	5	19M	·5172
633	3734	6	19M	·7759
634	3735	1	20M	·0347
635	3736	2	20M	·2934
636	3737	3	19M	·5522
637	3738	4	19M	·8109
638	3739	6	20M	·0697
639	3740	7	20M	·3285
640	3741	1	19M	·5872
641	3742	2	19M	·8460
642	3743	4	20M	·1047
643	3744	5	20M	·3635
644	3745	6	19M	·6222
645	3746	7	19M	·8810
646	3747	2	20M	·1298
647	3748	3	20M	·3985
648	3749	4	19M	·6573
649	3750	5	19M	·9163

for A.D. 500 to A.D. 999.

First New-Moon in Solar Year	Anomaly of first New-Moon
1·2373	27·496
19·8762	25·629
8·9845	21·786
27·6234	19·919
16·7317	16·077
5·8400	12·234
24·4789	10·367
13·5872	6·524
2·6955	2·681
21·3344	0·815
10·4427	24·527
29·0816	22·660
18·1899	18·817
7·2982	14·974
25·9370	13·107
15·0453	9·265
4·1536	5·423
22·7925	3·555
11·9008	27·267
1·0091	23·425
19·6480	21·558
8·7563	17·715
27·3952	15·848
16·5035	12·006
5·6118	8·163
24·2507	6·296
13·3590	2·453
2·4673	26·165
21·1062	24·298
10·2145	20·456
28·8534	18·589
17·9617	14·746
7·0700	10·903
25·7088	9·037
14·8171	5·194
3·9254	1·351
22·5643	27·039
11·6726	23·196
0·7809	19·354
19·4198	17·487
8·5281	13·644
27·1670	11·777
16·2753	7·935
5·3836	4·093
24·0225	2·225
13·1308	25·937
2·2391	22·094
20·8780	20·227
9·9863	16·384
28·6251	14·518

A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
650	3751	7	20M	·1748	17·7334	10·675
651	3752	1	20M	·4335	6·8417	6·833
652	3753	2	19M	·6923	25·4806	4·966
653	3754	3	19M	·9511	14·5889	1·123
654	3755	5	20M	·2098	3·6972	24·835
655	3756	6	20M	·4686	22·3361	22·968
656	3757	7	19M	·7273	11·4444	19·125
657	3758	1	19M	·9861	0·5527	15·283
658	3759	3	20M	·2448	19·1916	13·416
659	3760	4	20M	·5036	8·2999	9·573
660	3761	5	19M	·7623	26·9388	7·706
661	3762	7	20M	·0211	16·0471	3·864
662	3763	1	20M	·2799	5·1554	0·021
663	3764	2	20M	·5386	23·7943	25·709
664	3765	3	19M	·7974	12·9026	21·866
665	3766	5	20M	·0561	2·0109	18·023
666	3767	6	20M	·3149	20·6498	16·156
667	3768	7	20M	·5737	9·7581	12·314
668	3769	1	19M	·8324	28·3969	10·447
669	3770	3	20M	·0912	17·5052	6·604
670	3771	4	20M	·3499	6·6135	2·761
671	3772	5	20M	·6087	25·2524	0·895
672	3773	6	19M	·8674	14·3607	24·606
673	3774	1	20M	·1262	3·4690	20·764
674	3775	2	20M	·3850	22·1079	18·897
675	3776	3	20M	·6437	11·2162	15·054
676	3777	4	19M	·9025	0·3245	11·212
677	3778	6	20M	·1612	18·9634	9·345
678	3779	7	20M	·4200	8·0717	5·502
679	3780	1	20M	·6787	26·7106	3·635
680	3781	2	19M	·9375	15·8189	27·347
681	3782	4	20M	·1962	4·9272	23·504
682	3783	5	20M	·4550	23·5661	21·638
683	3784	6	20M	·7138	12·6744	17·795
684	3785	7	19M	·9725	1·7827	13·952
685	3786	2	20M	·2313	20·4216	12·085
686	3787	3	20M	·4900	9·5299	8·242
687	3788	4	20M	·7488	28·1687	6·376
688	3789	5	20M	·0075	17·2770	2·533
689	3790	7	20M	·2663	6·3853	26·245
690	3791	1	20M	·5251	25·0242	24·378
691	3792	2	20M	·7838	14·1325	20·535
692	3793	4	20M	·0426	3·2408	16·693
693	3794	5	20M	·3013	21·8797	14·826
694	3795	6	20M	·5601	10·9808	10·983
695	3796	7	20M	·8188	0·0963	7·140
696	3797	2	20M	·0776	18·7352	5·274
697	3798	3	20M	·3364	7·8435	1·431
698	3799	4	20M	·5951	26·4824	27·119
699	3800	5	20M	·8539	15·5907	23·276

A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
700	3801	7	20M	·1126	4·6990	19·433
701	3802	1	20M	·3714	23·3379	17·567
702	3803	2	20M	·6301	12·4462	13·724
703	3804	3	20M	·8889	1·5545	9·881
704	3805	5	20M	·1477	20·1933	8·014
705	3806	6	20M	·4064	9·3016	4·172
706	3807	7	20M	·6652	27·9405	2·305
707	3808	1	20M	·9209	17·0488	26·017
708	3809	3	20M	·1827	6·1571	22·174
709	3810	4	20M	·4414	24·7960	20·307
710	3811	5	20M	·7002	13·9043	16·464
711	3812	6	20M	·9590	3·0126	12·632
712	3813	1	20M	·2177	21·6515	10·755
713	3814	2	20M	·4765	10·7598	6·912
714	3815	3	20M	·7352	29·3987	5·045
715	3816	4	20M	·9940	18·5070	1·203
716	3817	6	20M	·2527	7·6153	24·914
717	3818	7	20M	·5115	26·2542	23·048
718	3819	1	20M	·7703	15·3625	19·205
719	3820	3	21M	·0290	4·4708	15·362
720	3821	4	20M	·2878	23·1097	13·495
721	3822	5	20M	·5465	12·2180	9·653
722	3823	6	20M	·8053	1·3263	3·9[illegible]3
723	3824	1	21M	·0640	19·9651	0·100
724	3825	2	20M	·3228	9·0734	25·788
725	3826	3	20M	·5815	27·7123	21·946
726	3827	4	20M	·8403	16·8206	18·103
727	3828	6	21M	·0991	5·9289	16·236
728	3829	7	20M	·3578	24·5678	12·393
729	3830	1	20M	·6166	13·6761	8·551
730	3831	2	20M	·8753	2·7844	6·6[illegible]4 684
731	3832	4	21M	·1341	21·4233	2·841
732	3833	5	20M	·3928	10·5316	0·974
733	3834	6	20M	·6516	29·1705	24·686
734	3835	7	20M	·9104	18·2788	20·843
735	3836	2	21M	·1691	7·3871	18·976
736	3837	3	20M	·4279	26·0260	15·134
737	3838	4	20M	·6866	15·1343	11·291
738	3839	5	20M	·9454	4·2426	9·424
739	3840	7	21M	·2041	22·8815	5·582
740	3841	1	20M	·4629	11·9897	1·739
741	3842	2	20M	·7217	1·0980	27·427
742	3843	3	20M	·9804	19·7369	23·584
743	3844	5	21M	·2392	8·8452	21·717
744	3845	6	20M	·4979	27·4841	17·875
745	3846	7	20M	·7567	16·5924	14·032
746	3847	1	21M	·0154	5·7007	12·165
747	3848	3	21M	·2742	24·3396	8·322
748	3849	4	20M	·5330	13·4479	4·480
749	3850	5	20M	·7917	2·5562	[illegible]

A.D.	Kaliyuga.	Week-day of 1st January	Commencement of Indian Solar Year. Day	Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
750	3851	7	21M	·0505	21·1951	2·613
751	3852	1	21M	·3092	10·3034	26·325
752	3853	2	20M	·5680	28·9423	24·458
753	3854	3	20M	·8267	18·0506	20·615
754	3855	5	21M	·0855	7·1589	16·772
755	3856	6	21M	·3443	25·7978	14·906
756	3857	7	20M	·6030	14·9061	11·063
757	3858	1	20M	·8618	4·0144	7·220
758	3859	3	21M	·1205	22·6532	5·353
759	3860	4	21M	·3793	11·7615	1·511
760	3861	5	20M	·6380	0·8698	25·223
761	3862	6	20M	·8968	19·5087	23·356
762	3863	1	21M	·1556	8·6170	19·513
763	3864	2	21M	·4143	27·2559	17·646
764	3865	3	20M	·6731	16·3642	13·804
765	3866	4	20M	·9318	5·4725	9·961
766	3867	6	21M	·1906	24·1114	8·094
767	3868	7	21M	·4493	13·2197	4·251
768	3869	1	20M	·7081	2·3280	0·409
769	3870	2	20M	·9668	20·9669	26·096
770	3871	4	21M	·2256	10·0752	22·254
771	3872	5	21M	·4844	28·7141	20·387
772	3873	6	20M	·7431	17·8224	16·544
773	3874	7	21M	·0019	6·9307	12·701
774	3875	2	21M	·2606	25·5696	10·835
775	3876	3	21M	·5194	14·6779	6·992
776	3877	4	20M	·7781	3·7862	3·149
777	3878	6	21M	·0369	22·4250	1·282
778	3879	7	21M	·2957	11·5333	24·994
779	3880	1	21M	·5544	0·6416	21·152
780	3881	2	20M	·8132	19·2805	19·284
781	3882	4	21M	·0719	8·3888	15·442
782	3883	5	21M	·3307	27·0277	13·575
783	3884	6	21M	·5894	16·1360	9·733
784	3885	7	20M	·8482	5·2443	5·890
785	3886	2	21M	·1070	23·8832	4·023
786	3887	3	21M	·3657	12·9915	0·180
787	3888	4	21M	·6245	2·0998	23·892
788	3889	5	20M	·8832	20·7387	22·025
789	3890	7	21M	·1420	9·8470	18·183
790	3891	1	21M	·4007	28·4859	16·316
791	3892	2	21M	·6595	17·5942	12·473
792	3893	3	20M	·9183	6·7025	8·630
793	3894	5	21M	·1770	25·3413	6·764
794	3895	6	21M	·4358	14·4496	2·921
795	3896	7	21M	·6945	3·5579	26·633
796	3897	1	20M	·9533	22·1968	24·766
797	3898	3	21M	·2120	11·3051	20·923
798	3899	4	21M	·4708	0·4134	17·080
799	3900	5	21M	·7296	19·0523	15·214

A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year. Day	Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
800	3901	6	20M	·9883	8·1606	11·371
801	3902	1	21M	·2471	26·7995	9·504
802	3903	2	21M	·5058	15·9078	5·661
803	3904	3	21M	·7646	5·0161	1·819
804	3905	5	21M	·0233	23·6550	27·507
805	3906	6	21M	·2821	12·7633	23·664
806	3907	7	21M	·5409	1·8716	19·821
807	3908	1	21M	·7996	20·5105	17·954
808	3909	3	21M	·0584	9·6188	14·112
809	3910	4	21M	·3171	28·2577	12·245
810	3911	5	21M	·5759	17·3660	8·402
811	3912	6	21M	·8346	6·4743	4·559
812	3913	1	21M	·0934	25·1131	2·693
813	3914	2	21M	·3522	14·2214	26·404
814	3915	3	21M	·6109	3·3297	22·562
815	3916	4	21M	·8697	21·9686	20·695
816	3917	6	21M	·1284	11·0769	16·852
817	3918	7	21M	·3872	0·1852	13·009
818	3919	1	21M	·6459	18·8241	11·143
819	3920	2	21M	·9047	7·9324	7·300
820	3921	4	21M	·1634	26·5713	5·433
821	3922	5	21M	·4222	15·6796	1·590
822	3923	6	21M	·6810	4·7879	25·302
823	3924	7	21M	·9397	23·4268	23·435
824	3925	2	21M	·1985	12·5351	19·593
825	3926	3	21M	·4572	1·6434	15·750
826	3927	4	21M	·7160	20·2823	13·883
827	3928	5	21M	·9747	9·3906	10·040
828	3929	7	21M	·2335	28·0295	8·174
829	3930	1	21M	·4923	17·1378	4·331
830	3931	2	21M	·7510	6·2461	0·488
831	3932	3	22M	·0098	24·8849	26·176
832	3933	5	21M	·2685	13·9932	22·333
833	3934	6	21M	·5273	3·1015	18·491
834	3935	7	21M	·7860	21·7404	16·624
835	3936	2	22M	·0448	10·8487	12·781
836	3937	3	21M	·3036	29·4876	10·914
837	3938	4	21M	·5623	18·5959	7·072
838	3939	5	21M	·8211	7·7042	3·229
839	3940	7	22M	·0798	26·3431	1·362
840	3941	1	21M	·3386	15·4514	25·074
841	3942	2	21M	·5973	4·5597	21·231
842	3943	3	21M	·8561	23·1986	19·364
843	3944	5	22M	·1149	12·3069	15·522
844	3945	6	21M	·3736	1·4152	11·679
845	3946	7	21M	·6324	20·0541	9·812
846	3947	1	21M	·8911	9·1624	5·969
847	3948	3	22M	·1499	27·8012	4·103
848	3949	4	21M	·4086	16·9095	0·260
849	3950	5	21M	·6674	6·0178	23·972

A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year. Day	Fraction of day
850	3951	6	21M	·9262
851	3952	1	22M	·1849
852	3953	2	21M	·4437
853	3954	3	21M	·7024
854	3955	4	21M	·9612
855	3956	6	22M	·2199
856	3957	7	21M	·4787
857	3958	1	21M	·7375
858	3959	2	21M	·9962
859	3960	4	22M	·2550
860	3961	5	21M	·5137
861	3962	6	21M	·7725
862	3963	1	22M	·0312
863	3964	2	22M	·2900
864	3965	3	21M	·5487
865	3966	4	21M	·8075
866	3967	6	22M	·0663
867	3968	7	22M	·3250
868	3969	1	21M	·5838
869	3970	2	21M	·8425
870	3971	4	22M	·1013
871	3972	5	22M	·3600
872	3973	6	21M	·6188
873	3974	7	21M	·8776
874	3975	2	22M	·1363
875	3976	3	22M	·3951
876	3977	4	21M	·6538
877	3978	5	21M	·9126
878	3979	7	22M	·1713
879	3980	1	22M	·4301
880	3981	2	21M	·6889
881	3982	3	21M	·9476
682	3983	5	22M	·2064
883	3984	6	22M	·4651
884	3985	7	21M	·7239
885	3986	1	21M	·9826
886	3987	3	22M	·2414
887	3988	4	22M	·5002
888	3989	5	21M	·7589
889	3990	6	22M	·0177
890	3991	1	22M	·2764
891	3992	2	22M	·5352
892	3993	3	21M	·7939
893	3994	5	22M	·0527
894	3995	6	22M	·3115
895	3996	7	22M	·5702
896	3997	1	21M	·8290
897	3998	3	22M	·0877
898	3999	4	22M	·3465
899	4000	5	22M	·6052

for A.D. 500 to A.D. 999.

First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Kaliyuga	Week-day of 1st January	Commencement of Indian Solar Year: Day	Commencement of Indian Solar Year: Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon
24·6567	22·105	**900**	4001	6	21M	·8640	11·6220	3·309	**950**	4051	6	22M	·8018	28·1184	14·043
13·7650	18·262	**901**	4002	1	22M	·1228	0·7306	27·021	**951**	4052	1	23M	·0606	17·2267	10·200
2·8733	14·419	**902**	4003	2	22M	·3815	19·3694	25·154	**952**	4053	2	22M	·3194	6·3350	6·357
21·5122	12·552	**903**	4004	3	22M	·6403	8·4777	21·311	**953**	4054	3	22M	·5781	24·9739	4·490
10·6205	8·140	**904**	4005	4	21M	·8090	27·1166	19·444	**954**	4055	4	22M	·8369	14·0822	0·648
29·2594	6·843	**905**	4006	6	22M	·1578	16·2249	15·602	**955**	4056	6	23M	·0956	3·1905	24·359
18·3677	3·000	**906**	4007	7	22M	·4165	5·3332	11·752	**956**	4057	7	22M	·3544	21·8293	22·493
7·4760	26·712	**907**	4008	1	22M	·6753	23·9721	9·892	**957**	4058	1	22M	·6131	10·9376	18·650
26·1149	24·845	**908**	4009	2	21M	·9341	13·0804	6·049	**958**	4059	2	22M	·8719	0·0459	14·807
15·2232	21·003	**909**	4010	4	22M	·1928	2·1887	2·207	**959**	4060	4	23M	·1306	18·6848	12·940
4·3315	17·160	**910**	4011	5	22M	·4516	20·8276	0·340	**960**	4061	5	22M	·3894	7·7931	9·098
22·9704	15·293	**911**	4012	6	22M	·7103	9·9359	24·052	**961**	4062	6	22M	·6482	26·4320	7·231
12·0787	11·450	**912**	4013	7	21M	·9691	28·5748	22·185	**962**	4063	7	22M	·9069	15·5403	3·388
1·1870	7·608	**913**	4014	2	22M	·2278	17·6831	18·342	**963**	4064	2	23M	·1657	4·6486	27·100
19·8259	5·741	**914**	4015	3	22M	·4866	6·7914	14·499	**964**	4065	3	22M	·4244	23·2875	25·233
8·9342	1·898	**915**	4016	4	22M	·7453	25·4303	12·633	**965**	4066	4	22M	·6832	12·3958	21·391
27·5730	0·031	**916**	4017	5	21M	·0041	14·5386	8·790	**966**	4067	5	22M	·9419	1·5041	17·548
16·6813	23·744	**917**	4018	7	22M	·2629	3·6469	4·947	**967**	4068	7	23M	·2007	20·1430	15·681
5·7896	19·901	**918**	4019	1	22M	·5216	22·2858	3·080	**968**	4069	1	22M	·4595	9·2513	11·838
24·4285	18·034	**919**	4020	2	22M	·7804	11·3941	26·792	**869**	4070	2	22M	·7182	27·8902	9·972
13·5368	14·191	**920**	4021	4	22M	·0391	0·5024	22·949	**970**	4071	3	22M	·9770	16·9985	6·129
2·6451	10·348	**921**	4022	5	22M	·2979	19·1412	21·083	**971**	4072	5	23M	·2357	6·1068	2·286
21·2840	8·481	**922**	4023	6	22M	·5566	8·2495	17·240	**972**	4073	6	22M	·4945	24·7457	0·419
10·3923	4·639	**923**	4024	7	22M	·8154	26·8884	15·373	**973**	4074	7	22M	·7532	13·8540	24·131
29·0312	2·772	**924**	4025	2	22M	·0742	15·9967	11·530	**974**	4075	1	23M	·0120	2·9623	20·288
18·1395	26·484	**925**	4026	3	22M	·3329	5·1050	7·688	**975**	4076	3	23M	·2708	21·6011	18·422
7·2478	22·641	**926**	4027	4	22M	·5917	23·7439	5·828	**976**	4077	4	22M	·6295	10·7094	14·579
25·8867	20·774	**927**	4028	5	22M	·8504	12·8522	1·976	**977**	4078	5	22M	·7883	29·3483	12·712
14·9950	16·932	**928**	4029	7	22M	·1092	1·9605	25·690	**978**	4079	7	23M	·0470	18·4566	8·869
4·1033	13·089	**929**	4030	1	22M	·3679	20·5994	23·823	**979**	4080	1	23M	·3058	7·5649	5·030
22·7422	11·222	**930**	4031	2	22M	·6267	9·7077	19·980	**980**	4081	2	22M	·5645	26·2038	3·160
11·8505	7·379	**931**	4032	3	22M	·8855	28·3466	18·114	**981**	4082	3	22M	·8233	15·3121	26·872
0·9588	3·537	**932**	4033	5	22M	·1442	17·4549	14·271	**982**	4083	5	23M	·0821	4·4204	23·029
19·5977	1·670	**933**	4034	6	22M	·4020	6·5632	10·428	**983**	4084	5	23M	·3408	23·0593	21·162
8·7060	25·382	**934**	4035	7	22M	·6617	25·2021	8·561	**984**	4085	7	22M	·5996	12·1676	17·319
27·3448	23·515	**935**	4036	1	22M	·9205	14·3104	4·719	**985**	4086	1	22M	·8583	1·2759	13·477
16·4531	19·672	**936**	4037	3	22M	·1792	3·4187	0·876	**986**	4087	3	23M	·1171	19·9148	11·610
5·5614	15·829	**937**	4038	4	22M	·4380	22·0575	26·564	**987**	4088	4	23M	·3758	9·0231	7·767
24·2003	13·963	**938**	4039	5	22M	·6968	11·1658	22·721	**988**	4089	5	22M	·6346	27·6620	5·900
13·3086	10·120	**939**	4040	6	22M	·9555	0·2741	18·878	**989**	4090	6	22M	·8994	16·7703	2·058
2·4169	6·277	**940**	4041	1	22M	·2143	18·9130	17·011	**990**	4091	1	23M	·1521	5·8786	25·769
21·0558	4·410	**941**	4042	2	22M	·4730	8·0213	13·169	**991**	4092	2	23M	·4109	24·5174	23·903
10·1641	0·568	**942**	4043	3	22M	·7318	26·6602	11·299	**992**	4093	3	22M	·6696	13·6257	20·060
28·8030	26·256	**943**	4044	4	22M	·9904	15·7685	7·459	**993**	4094	4	22M	·9284	2·7340	16·217
17·9113	22·413	**944**	4045	5	22M	·2493	4·8768	3·617	**994**	4095	6	23M	·1871	21·3729	14·350
7·0196	18·570	**945**	4046	7	22M	·5081	23·5157	1·750	**995**	4096	7	23M	·4459	10·4812	10·508
25·6585	16·703	**946**	4047	1	22M	·7668	12·6240	25·463	**996**	4097	1	22M	·7047	29·1201	8·641
14·7668	12·861	**947**	4048	2	22M	·0256	1·7323	21·612	**997**	4098	2	22M	·9634	18·2284	4·798
3·8751	9·018	**948**	4049	4	22M	·2843	20·3712	19·752	**998**	4099	4	23M	·2222	7·3367	0·955
22·5140	7·151	**949**	4050	5	22M	·5431	9·4795	15·909	**999**	4100	5	23M	·4809	25·9756	26·643

TABLE X-

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
4101	1057	922	22M	·7396	15·0839	22·801	**1000**	2	7	Ap	6●	·82	2	My	6	·35	3	Je	4	·88	5	Jl	4	·41	6	Au	2	·9
4102	1058	923	22M	·9983	4·1922	18·959	**1001**	4	5	Mr	27	·19	6	Ap	25	·72	1	My	25	·25	4	Jl	23	·31	5	Au	21○	·8
																	2	Je	23	·78								
4103	1059	924	23M	·2571	22·8311	17·091	**1002**	5	4	Ap	15	·09	5	My	14	·62	7	Je	13	·15	1	Jl	12	·68	3	Au	11●○	·2
4104	1060	925	23M	·5158	11·9394	13·249	**1003**	6	1	Ap	4	·45	2	My	3	·99	4	Je	2	·52	6	Jl	2	·05	7	Jl	31○	·5
4105	1061	926	22M	·7746	1·0477	9·406	**1004**	7	5	Mr	23	·82	1	My	21	·88	3	Je	20○	·41	4	Jl	19●	·94	6	Au	18	·47
									7	Ap	22	·35																
4106	1062	927	23M	·0334	19·6866	7·539	**1005**	2	4	Ap	11	·72	6	My	11	·25	7	Je	9○	·78	2	Jl	9	·31	3	Au	7	·84
4107	1063	928	23M	·2921	8·7949	3·696	**1006**	3	2	Ap	1	·09	3	Ap	30	·62	5	My	30○	·15	6	Je	28	·68	1	Jl	28	·21
																									2	Au	26	·74
4108	1064	929	23M	·5509	27·4338	1·830	**1007**	4	7	Ap	19	·98	2	My	19●	·51	4	Je	18	·05	5	Jl	17	·58	7	Au	16	·11
4109	1065	930	22M	·8096	16·5421	25·542	**1008**	5	5	Ap	8○	·35	6	My	7	·88	1	Je	6	·41	2	Jl	5	·94	4	Au	4	·47
4110	1066	931	23M	·0684	5·6504	21·699	**1009**	7	2	Mr	28○	·72	4	Ap	27	·25	5	My	26	·78	7	Je	25	·31	3	Au	23	·37
																					1	Jl	24	·84				
4111	1067	932	23M	·3271	24·2892	19·832	**1010**	1	1	A[illegible]	[illegible]6	·62	3	My	16	·15	4	Je	14	·68	6	Jl	14	·21	7	Au	12	·74
4112	1068	933	23M	·5859	13·3975	15·989	**1011**	2	5	Ap	5	·98	7	My	5	·51	2	Je	4	·04	3	Jl	3	·57	5	Au	2	·11
4113	1069	934	22M	·8446	2·5058	12·147	**1012**	3	3	Mr	25	·35	4	Ap	23	·88	7	Je	21	·94	2	Jl	21○	·47	4	Au	20●	·00
													6	My	23	·41												
4114	1070	935	23M	·1034	21·1447	10·280	**1013**	5	2	Ap	13	·25	3	My	12	·78	5	Je	11	·31	6	Jl	10○	·84	1	Au	9	·37
4115	1071	936	23M	·3622	10·2530	6·437	**1014**	6	6	Ap	2	·61	1	My	2	·15	2	My	31	·68	4	Je	30●○	·21	5	Jl	29	·74
4116	1072	937	23M	·6209	28·8919	4·570	**1015**	7	5	Ap	21	·51	7	My	21○	·04	1	Je	19●	·57	3	Jl	19	·10	4	Au	17	·63
4117	1073	938	22M	·8797	18·0002	0·727	**1016**	1	2	Ap	9	·88	4	My	9○	·41	5	Je	7	·94	7	Jl	7	·47	2	Au	6	·00
4118	1074	939	23M	·1384	7·1085	24·439	**1017**	3	7	Mr	30	·25	1	Ap	28○	·78	3	My	28	·31	4	Je	26	·84	7	Au	24	·90
																					6	Jl	26	·37				
4119	1075	940	23M	·3972	25·7474	22·573	**1018**	4	6	Ap	18	·14	7	My	17	·67	2	Je	16	·21	3	Jl	15	·74	5	Au	14	·27
4120	1076	941	23M	·6559	14·8557	18·730	**1019**	5	3	Ap	7●	·51	5	My	7	·04	6	Je	5	·57	1	Jl	5	·10	2	Au	3	·63
4121	1077	942	22M	·9147	3·9640	14·887	**1020**	6	7	Mr	26	·88	2	Ap	25	·41	3	My	24	·94	7	Jl	23	·00	1	Au	21○	·53
																	5	Je	23	·47								
4122	1078	943	23M	·1735	22·6029	13·020	**1021**	1	6	Ap	14	·78	1	My	14	·31	2	Je	12	·84	4	Jl	12	·37	5	Au	10●○	·90
4123	1079	944	23M	·4322	11·7112	9·178	**1022**	2	4	Ap	4	·14	5	My	3	·67	7	Je	2	·20	1	Jl	1○	·73	3	Jl	31	·27
4124	1080	945	23M	·6910	0·8195	5·334	**1023**	3	1	Mr	24	·51	4	My	22	·57	6	Je	21○	·10	7	Jl	20	·63	2	Au	19	·16
									3	Ap	23	·04																
4125	1081	946	22M	·9497	19·4584	3·468	**1024**	4	7	Ap	11	·41	1	My	10	·94	3	Je	9●○	·47	5	Jl	9	·00	6	Au	7	·53
4126	1082	947	23M	·2085	8·5667	27·180	**1025**	6	4	Mr	31	·77	6	Ap	30	·31	7	My	29	·84	2	Je	28	·37	3	Jl	27	·90
																									5	Au	26	·43
4127	1083	948	23M	·4672	27·2056	25·313	**1026**	7	3	Ap	19○	·67	5	My	19●	·20	6	Je	17	·73	1	Jl	17	·26	2	Au	15	·79
4128	1084	949	23M	·7260	16·3139	21·470	**1027**	1	1	Ap	9○	·04	2	My	8	·57	4	Je	7	·10	5	Jl	6	·63	7	Au	5	·16
4129	1085	950	22M	·9848	5·4222	17·628	**1028**	2	5	Mr	28○	·41	6	Ap	26	·94	1	My	26	·47	3	Je	25	·00	6	Au	23	·06
																					4	Jl	24	·53				
4130	1086	951	23M	·2435	24·0610	15·761	**1029**	4	4	Ap	16	·30	5	My	15	·83	7	Je	14	·37	1	Jl	13	·90	3	Au	12	·43
4131	1087	952	23M	·5023	13·1693	11·918	**1030**	5	1	Ap	5	·67	3	My	5	·20	4	Je	3	·73	6	Jl	3	·26	7	Au	1○	·79
4132	1088	953	23M	·7610	2·2776	8·075	**1031**	6	6	Mr	26	·04	7	Ap	24	·57	3	Je	22	·63	5	Jl	22○	·16	6	Au	20	·69
													2	My	24	·10												
4133	1089	954	22M	·0198	20·9165	6·209	**1032**	7	4	Ap	12	·94	6	My	12	·47	1	Je	11	·00	2	Jl	10●○	·53	4	Au	9	·06
4134	1090	955	23M	·2785	10·0218	2·366	**1033**	2	2	Ap	2	·30	3	My	1	·83	5	My	31○	·36	6	Je	29●	·89	1	Jl	29	·43
4135	1091	956	23M	·5373	28·6637	0·499	**1034**	3	1	Ap	21	·20	2	My	20○	·73	4	Je	19●	·26	5	Jl	18	·79	7	Au	17	·32
4136	1092	957	23M	·7960	17·7720	24·211	**1035**	4	5	Ap	10	·57	7	My	10●○	·10	1	Je	8	·63	3	Jl	8	·16	4	Au	6	·69
4137	1093	958	23M	·0548	6·8803	20·368	**1036**	5	2	Mr	29	·93	4	Ap	28●	·47	6	My	28	·00	7	Je	26	·53	3	Au	24	·59
																					2	Jl	26	·06				
4138	1094	959	23M	·3136	25·5192	18·501	**1037**	7	1	Ap	17	·83	3	My	17	·36	4	Je	15	·89	6	Jl	15	·42	7	Au	13	·95
4139	1095	960	23M	·5723	14·6275	14·659	**1038**	1	6	Ap	7	·20	7	My	6	·73	2	Je	5	·26	3	Jl	4	·79	5	Au	3	·32

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
1	S	1	·48	3	O	1●	·01	4	O	30	·54	6	N	29	·07		7	D	28	·60	01	2	Jr	27	·13	3	F	25○	·66
7	S	20●	·37	1	O	19	·90	3	N	18	·43	4	D	17	·97	02	6	Jr	16	·50		1	F	15○	·03	2	Mr	16	·56
4	S	9	·74	6	O	9	·27	7	N	7	·80	2	D	7	·33	03	3	Jr	5	·86		5	F	4○	·39	6	Mr	5	·92
2	Au	30	·11	3	S	28	·64	5	O	28	·17	6	N	26	·70		1	D	26	·23	04	2	Jr	24	·76	4	F	23	·29
1	S	17	·01	2	O	16	·54	4	N	15	·07	5	D	14○	·60	05	7	Jr	13●	·13		1	F	11	·66	3	Mr	13	·19
5	S	6	·37	6	O	5	·90	1	N	4	·43	2	D	3○	·96	06	4	Jr	2	·49		6	F	1	·03	7	Mr	2	·56
4	S	25	·27	5	O	24	·80	7	N	23○	·33	1	D	22	·86	07	3	Jr	21	·39		4	F	19	·92	6	Mr	21	·45
1	S	14	·64	3	O	14	·17	4	N	12	·70	6	D	12	·23	08	7	Jr	10	·76		2	F	9	29	3	Mr	9	·82
6	S	3	·00	7	O	2○	·53	2	N	1	·07	3	N	30	·60		5	D	30	·13	09	6	Jr	28	·66	1	F	27	·19
4	S	21○	·90	6	O	21	·43	7	N	19	·96	2	D	19	·49	10	4	Jr	18	·02		5	F	16	·55	7	Mr	18○	·09
2	S	11○	·27	3	O	10	·80	5	N	9	·33	6	D	8	·86	11	1	Jr	7	·39		2	F	5	·92	4	Mr	7	·45
6	Au	31	·64	1	S	30	·17	2	O	29	·70	4	N	28	·23		5	D	27	·76	12	7	Jr	26○	·29	1	F	24	·82
5	S	18	·53	7	O	18	·06	1	N	16	·59	3	D	16	·13	13	4	Jr	14○	·66		6	F	13	·19	7	Mr	14	·72
2	S	7	·90	4	C	7	·43	5	N	5	·96	7	D	5	·49	14	2	Jr	4●	·02		3	F	2	·55	5	Mr	4	·08
7	Au	28	·27	1	S	26	·80	3	O	26	·33	4	N	24	·86		6	D	24	·39	15	7	Jr	22	·92	2	F	21	·45
																										3	Mr	22	·98
6	S	16	·17	7	O	15	·70	2	N	14○	·23	3	D	13	·76	16	5	Jr	12	·29		6	F	10	·82	1	Mr	11	·35
3	S	4	·53	5	O	4	·06	6	N	2○	·59	1	D	2	·12		2	D	31	·65	17	4	Jr	30	·19	5	F	28	·72
2	S	23	·43	3	O	22○	·96	5	N	21	·49	7	D	21	·02	18	1	Jr	19	·55		3	F	18	·08	4	Mr	19	·61
6	S	12	·83	1	O	12	·33	2	N	10	·86	4	D	10	·39	19	5	Jr	8	·92		7	F	7	·45	1	Mr	8○	·98
4	S	2○	·16	5	O	1	·69	7	O	31	·23	1	N	29	·76		3	D	29	·29	20	4	Jr	27	·82	6	F	26○	·35
3	S	20	·06	4	O	19	·59	6	N	18	·12	7	D	17	·65	21	2	Jr	16	·18		3	F	14○	·71	5	Mr	16	·25
7	S	9	·43	1	O	8	·96	3	N	7	·49	5	D	7	·02	22	6	Jr	5	·55		1	F	4	·08	2	Mr	5	·61
4	Au	29	·80	6	S	28	·33	7	O	27	·86	2	N	26	·39		3	D	25○	·92	23	5	Jr	24	·45	6	F	22	·98
3	S	17	·69	5	O	17	·22	6	N	15	·75	1	D	15○	·29	24	2	Jr	13	·82		4	F	12	·35	5	Mr	12	·88
1	S	6	·06	2	O	5	·59	4	N	4	·12	5	D	3●○	·65	25	7	Jr	2	·18		1	Jr	31	·71	3	Mr	2	·24
6	S	24	·96	1	O	24	·49	3	N	23●	·02	4	D	22	·55	26	6	Jr	21	·08		7	F	19	·61	2	Mr	21	·14
4	S	14	·33	5	O	13○	·86	7	N	12●	·39	1	D	11	·92	27	3	Jr	10	·45		4	F	8	·98	6	Mr	10	·51
1	S	3	·69	3	O	3○	·22	4	N	1●	·75	6	D	1	·28		7	D	30	·81	28	2	Jr	29	·35	3	F	27	·88
7	S	21●○	·59	2	O	21	·12	3	N	19	·65	5	D	19	·18	29	6	Jr	17	·71		1	F	16	·24	2	Mr	17	·77
4	S	10●	·96	6	O	10	·49	1	N	9	·02	2	D	8	·55	30	4	Jr	7	·08		5	F	5○	·61	7	Mr	7	·14
2	Au	31	·32	3	S	29	·85	5	O	29	·39	6	N	27	·92		1	D	27	·45	31	2	Jr	25○	·98	4	F	24	·51
1	S	19	·22	2	O	18	·75	4	N	17	·28	5	D	16	·81	32	7	Jr	15●	·34		1	F	13	·87	3	Mr	14	·41
5	S	7	·59	7	O	7	·12	1	N	5	·65	3	D	5	·18	33	4	Jr	3●	·71		6	F	2	·24	7	Mr	3	·77
2	Au	27	·96	4	S	26	·49	6	O	26	·02	7	N	24○	·55		2	D	24	·08	34	3	Jr	22	·61	5	F	21	·14
																										6	Mr	22	·67
1	S	15	·85	3	O	15	·38	4	N	13○	·91	6	D	13	·45	35	7	Jr	11	·98		2	F	10	·51	4	Mr	12	·04
6	S	5	·22	7	O	4	·75	2	N	3○	·28	3	D	2	·81	36	5	Jr	1	·34		6	Jr	30	·87	1	F	29	·40
5	S	23	·12	6	O	22●	·65	1	N	21	·18	2	D	20	·71	37	4	Jr	19	·24		5	F	17	·77	7	Mr	19○	·30
2	S	12○	·49	4	O	12	·02	5	N	10	·55	7	D	10	·08	38	1	Jr	8	·61		3	F	7	·14	4	Mr	8○	·67
6	S	1○	·85	1	O	1	·38	2	O	30	·91	4	N	29	·44		5	D	28	·97	39	7	Jr	27	·51	2	F	26○	·04

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha (☉'s Anom col. 6; ☾'s Anom col. 7) Week-day	Month	Day	Fraction	Jyeshta (+ 29·53059; + 1·976) Week-day	Month	Day	Fraction	Ashada (+ 59·06117; + 3·952) Week-day	Month	Day	Fraction	Sravana (+ 88·59176; + 5·928) Week-day	Month	Day	Fraction	Bhadrapada (+ 118·12235; + 7·904) Week-day	Month	Day	Fraction
4140	1096	961	23M	·8311	3·7358	10·816	**1039**	2	3	Mr	27	·57	5	Ap	26	·10	{ 6	My	25	·63	2	Jl	23	·69	4	Au	22●○	·22
																	{ 1	Je	24	·16								
4141	1097	962	23M	·0898	22·3747	9·949	**1040**	3	2	Ap	14	·46	3	My	13	·99	5	Je	12	·53	7	Jl	12	·06	1	Au	10	·59
4142	1098	963	23M	·3486	11·4830	5·106	**1041**	5	6	Ap	3	·83	1	My	3	·36	2	Je	1	·89	4	Jl	1○	·42	5	Jl	30	·95
4143	1099	964	23M	·6073	0·5913	1·264	**1042**	6	{ 4	Mr	24	·20	7	My	22	·26	1	Je	20●○	·79	3	Jl	20	·32	4	Au	18	·85
									{ 5	Ap	22	·73																
4144	1100	965	23M	·8661	19·2302	26·952	**1043**	7	3	Ap	12	·10	4	My	11	·63	6	Je	10●	·16	7	Jl	9	·69	2	Au	8	·22
4145	1101	966	23M	·1249	8·3385	23·109	**1044**	1	7	Mr	31	·46	1	Ap	29○	·99	3	My	29	·52	5	Je	28	·05	{ 6	Jl	27	·59
																									{ 1	Au	26	·12
4146	1102	967	23M	·3836	26·9773	21·242	**1045**	3	6	Ap	19●○	·36	7	My	18	·89	2	Je	17	·42	3	Jl	16	·95	5	Au	15	·48
4147	1103	968	23M	·6424	16·0856	17·399	**1046**	4	3	Ap	8●○	·73	5	My	8	·26	6	Je	6	·79	1	Jl	6	·32	2	Au	4	·85
4148	1104	969	23M	·9011	5·1939	13·557	**1047**	5	1	Mr	29●	·09	2	Ap	27	·63	4	My	27	·16	{ 5	Je	25	·69	1	Au	23	·75
																					{ 7	Jl	25	·22				
4149	1105	970	23M	·1599	23·8328	11·690	**1048**	6	6	Ap	15	·99	1	My	15	·52	3	Je	14	·05	4	Jl	13	·58	6	Au	12○	·11
4150	1106	971	23M	·4186	12·9411	7·847	**1049**	1	4	Ap	5	·36	5	My	4	·89	7	Je	3	·42	1	Jl	2	·95	3	Au	1○	·48
4151	1107	972	23M	·6774	2·0494	4·004	**1050**	2	1	Mr	25	·73	{ 3	Ap	24	·26	6	Je	22	·32	7	Jl	21○	·85	2	Au	20	·38
													{ 4	My	23	·79												
4152	1108	973	23M	·9362	20·6883	2·138	**1051**	3	7	Ap	13	·62	2	My	13	·15	3	Je	11○	·69	5	Jl	11	·22	6	Au	9	·75
4153	1109	974	23M	·1949	9·7966	25·849	**1052**	4	4	Ap	1	·99	6	My	1	·52	1	My	31○	·05	2	Je	29	·58	4	Jl	29	·11
4154	1110	975	23M	·4537	28·4355	23·983	**1053**	6	3	Ap	20	·89	5	My	20○	·42	6	Je	18	·95	1	Jl	18	·48	3	Au	17	·01
4155	1111	976	23M	·7124	17·5438	20·140	**1054**	7	1	Ap	10	·26	2	My	9●	·79	4	Je	8	·32	5	Jl	7	·85	7	Au	6	·38
4156	1112	977	23M	·9711	6·6521	16·297	**1055**	1	5	Mr	30○	·62	7	Ap	29	·15	1	My	28	·68	{ 3	Je	27	·21	6	Au	25	·28
																					{ 4	Jl	26	·75				
4157	1113	978	23M	·2299	25·2910	14·430	**1056**	2	4	Ap	17	·52	6	My	17	·05	7	Je	15	·58	2	Jl	15	·11	3	Au	13	·64
4158	1114	979	23M	·4887	14·3993	10·588	**1057**	4	1	Ap	6	·89	3	My	6	·42	4	Je	4	·95	6	Jl	4	·48	1	Au	3	·01
4159	1115	980	23M	·7474	3·5076	6·745	**1058**	5	6	Mr	27	·25	{ 7	Ap	25	·79	3	Je	23	·85	5	Jl	23	·38	6	Au	21●	·91
													{ 2	My	25	·32												
4160	1116	981	24M	·0062	22·1465	4·878	**1059**	6	5	Ap	15	·15	6	My	14	·68	1	Je	13	·21	2	Jl	12○	·74	4	Au	11●	·27
4161	1117	982	23M	·2650	11·2548	1·035	**1060**	7	2	Ap	3	·52	4	My	3	·05	5	Je	1	·58	7	Jl	1○	·11	1	Jl	30	·64
4162	1118	983	23M	·5237	0·3631	24·747	**1061**	2	{ 6	Mr	23	·89	2	My	21	·95	4	Je	20●	·48	6	Jl	20	·01	7	Au	18	·54
									{ 1	Ap	22	·42																
4163	1119	984	23M	·7825	19·0020	22·880	**1062**	3	5	Ap	11	·78	7	My	11○	·31	1	Je	9	·85	3	Jl	9	·38	4	Au	7	·91
4164	1120	985	24M	·0412	8·1103	19·038	**1063**	4	3	Ap	1	·15	4	Ap	30○	·68	6	My	30	·21	7	Je	28	·74	{ 2	Jl	28	·27
																									{ 3	Au	26	·80
4165	1121	986	23M	·3000	26·7491	17·171	**1064**	5	2	Ap	19●○	·05	3	My	18	·58	5	Je	17	·11	6	Jl	16	·64	1	Au	15	·17
4166	1122	987	23M	·5587	15·8574	13·328	**1065**	7	6	Ap	8	·42	7	My	7	·95	2	Je	6	·48	4	Jl	6	·01	5	Au	4	·54
4167	1123	988	23M	·8175	4·9657	9·485	**1066**	1	3	Mr	28	·78	5	Ap	27	·31	{ 6	My	26	·84	2	Jl	24	·91	4	Au	23○	·44
																	{ 1	Je	25	·37								
4168	1124	989	24M	·0763	23·6046	7·619	**1067**	2	2	Ap	16	·68	4	My	16	·21	5	Je	14	·74	7	Jl	14	·27	1	Au	12○	·80
4169	1125	990	23M	·3350	12·7129	3·776	**1068**	3	7	Ap	5	·05	1	My	4	·58	3	Je	3	·11	4	Jl	2	·64	6	Au	1○	·17
4170	1126	991	23M	·5938	1·8212	27·488	**1069**	5	4	Mr	25	·41	{ 5	Ap	23	·95	2	Je	22	·01	3	Jl	21●	·54	5	Au	20	·07
													{ 7	My	23	·48												
4171	1127	992	23M	·8525	20·4601	25·621	**1070**	6	3	Ap	13	·31	4	My	12	·84	6	Je	11○	·37	7	Jl	10●	·90	2	Au	9	·43
4172	1128	993	24M	·1113	9·5684	21·778	**1071**	7	7	Ap	2	·68	2	My	2	·21	3	My	31○	·74	5	Je	30	·27	6	Jl	29	·80
4173	1129	994	23M	·3700	2·82073	19·912	**1072**	1	6	Ap	20	·58	1	My	20	·11	2	Je	18	·64	4	Jl	18	·17	5	Au	16	·70
4174	1130	995	23M	·6288	17·3156	16·069	**1073**	3	3	Ap	9○	·94	5	My	9●	·47	7	Je	8	·00	1	Jl	7	·54	3	Au	6	·07
4175	1131	996	23M	·8876	6·4239	12·226	**1074**	4	1	Mr	30○	·31	2	Ap	28●	·84	4	My	28	·37	{ 5	Je	26	·90	1	Au	24	·96
																					{ 7	Jl	26	·43				
4176	1132	997	24M	·1463	25·0628	10·359	**1075**	5	7	Ap	18	·21	1	My	17	·74	3	Je	16	·27	4	Jl	15	·80	6	Au	14	·33
4177	1133	998	23M	·4051	14·1711	6·517	**1076**	6	4	Ap	6	·58	6	My	6	·11	7	Je	4	·64	2	Jl	4	·17	3	Au	2	·70

Surya Siddhanta.

Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77529	+ 295·30588	{ +324·83647 { +354·36705
+ 9·880	+ 11·856	+ 13·832	+ 15·808	+ 17·784	+ 19·760	{ + 21·736 { + 23·712

Asvina Week-day	Month	Day	Fraction	Kartika Week-day	Month	Day	Fraction	Margasira Week-day	Month	Day	Fraction	Pausha Week-day	Month	Day	Fraction	A.D.	Magha Week-day	Month	Day	Fraction	A.D.	Phalguna Week-day	Month	Day	Fraction	Chaitra Week-day	Month	Day	Fraction
5	S	20	·75	7	O	20	·28	1	N	18	·81	3	D	18	·34	**40**	4	Jr	16	·87		6	F	15●	·40	7	Mr	15	·93
3	S	9	·12	4	O	8	·65	6	N	7	·18	7	D	6	·71	**41**	2	Jr	5○	·24		3	F	3	·77	5	Mr	5	·30
7	Au	29	·48	2	S	28	·01	3	O	27	·55	5	N	26	·08		6	D	25○	·61	**42**	1	Jr	24	·14	2	F	22	·67
6	S	17	·38	7	O	16	·91	2	N	15	·44	3	D	14●○	·97	**43**	5	Jr	13	·50		7	F	12	·03	1	Mr	13	·57
3	S	6	·75	5	O	6	·28	6	N	4	·81	1	D	4●	·34	**44**	2	Jr	2	·87		4	F	1	·40	5	Mr	1	·93
2	S	24	·65	4	O	24○	·18	5	N	22●	·71	7	D	22	·24	**45**	1	Jr	20	·77		3	F	19	·30	4	Mr	20	·83
7	S	14	·01	1	O	13○	·54	3	N	12	·07	4	D	11	·61	**46**	6	Jr	10	·14		7	F	8	·67	2	Mr	10	·20
4	S	3	·38	5	O	2○	·91	7	N	1	·44	1	N	30	·97		3	D	30	·50	**47**	5	Jr	29	·03	6	F	27	·56
3	S	22●	·28	4	O	21	·81	6	N	20	·34	7	D	19	·87	**48**	2	Jr	18	·40		3	F	16○	·93	5	Mr	17●	·46
7	S	10	·65	2	O	10	·18	3	N	8	·79	5	D	8	·24	**49**	6	Jr	6	·77		1	F	5●○	·30	2	Mr	6	·83
5	Au	31	·01	6	S	29	·54	1	O	29	·07	2	N	27	·60		4	D	27	·13	**50**	5	Jr	25	·67	7	F	24	·20
3	S	18	·91	5	O	18	·44	6	N	16	·97	1	D	16	·50	**51**	3	Jr	15●	·03		4	F	13	·56	6	Mr	15	·09
1	S	8	·28	2	O	7	·81	4	N	6	·34	5	D	5○	·87	**52**	7	Jr	4	·40		1	F	2	·93	3	Mr	3	·46
{ 5	Au	27	·64	1	O	25	·71	3	N	24●○	·24	**Pausha**					4	D	23	·77	**53**	6	Jr	22	·30	{ 7	F	20	·83
{ 7	S	26	·17									**Kshaya**														{ 2	Mr	22	·36
4	S	15	·54	6	O	15	·07	7	N	13●○	·60	2	D	13	·13	**54**	3	Jr	11	·66		5	F	10	·19	6	Mr	11	·73
1	S	4	·91	3	O	4	·44	4	N	2●	·97	6	D	2	·50	**55**	1	Jr	1	·03		2	Jr	30	·56	4	Mr	1	·09
7	S	23○	·81	2	O	23●	·34	3	N	21	·87	5	D	21	·40	**56**	6	Jr	19	·93		1	F	18	·46	2	Mr	18○	·99
5	S	12●○	·17	6	O	11	·70	1	N	10	·23	2	D	9	·77	**57**	4	Jr	8	·30		5	F	6	·83	7	Mr	8○	·36
2	S	1○	·54	4	O	1	·07	5	O	30	·60	7	N	29	·13		1	D	28	·66	**58**	3	Jr	27	·19	4	F	25	·72
1	S	20	·44	2	O	19	·97	4	N	18	·50	6	D	18	·03	**59**	7	Jr	16○	·56		2	F	15●	·09	3	Mr	16	·62
5	S	9	·81	7	O	9	·34	1	N	7	·87	3	D	7	·40	**60**	4	Jr	5○	·93		6	F	4	·46	7	Mr	4	·99
3	Au	29	·17	4	S	27	·70	6	O	2[illegible]	·23	7	N	25	·76		2	D	25○	·29	**61**	3	Jr	23	·83	5	F	22	·36
2	S	17	·07	3	O	16	·60	5	N	1[illegible]	·13	6	D	14	·66	**62**	1	Jr	13	·19		2	F	11	·72	4	Mr	13	·25
6	S	6	·44	7	O	5	·97	2	N	4○	·50	4	D	4	·03	**63**	5	Jr	2	·56		7	F	1	·09	1	Mr	2	·62
5	S	25	·33	6	O	24○	·87	1	N	23	·40	2	D	22	·93	**64**	4	Jr	21	·46		5	F	19	·99	7	Mr	20	·52
2	S	13	·70	4	O	13●○	·23	5	N	11	·76	7	D	11	·29	**65**	1	Jr	9	·82		3	F	8	·35	4	Mr	9	·89
7	S	3	·07	1	O	2	·60	3	N	1	·13	4	N	30	·66		5	D	30	·19	**66**	7	Jr	28	·72	2	F	27○	·25
5	S	21●	·97	7	O	21	·50	2	N	20	·03	3	D	19	·56	**67**	5	Jr	18	·09		6	F	16○	·62	1	Mr	18	·15
3	S	11	·33	1	O	10	·86	6	N	9	·39	7	D	8	·93	**68**	2	Jr	7	·46		3	F	5●○	·99	5	Mr	6	·52
7	Au	30	·70	2	S	29	·23	3	O	28	·76	5	N	27	·29		6	D	26	·82	**69**	1	Jr	25	·35	2	F	23	·88
6	S	18	·60	1	O	18	·13	2	N	16	·66	4	D	16○	·19	**70**	5	Jr	14	·72		7	F	13	·25	1	Mr	14	·78
3	S	7	·79	5	O	7	·50	7	N	6	·03	1	D	5○	·56	**71**	3	Jr	4	·09		4	F	2	·62	6	Mr	4	·15
{ 1	Au	28	·33	4	O	26	·39	5	N	24○	·92	7	D	24	·45	**72**	1	Jr	22	·98		3	F	21	·52	5	Mr	22	·05
{ 2	S	26	·86																										
7	S	15	·23	1	O	14	·76	3	N	13	·29	4	D	12	·82	**73**	6	Jr	11	·35		7	F	9	·88	2	Mr	11	·41
4	S	4	·60	6	O	4○	·13	7	N	2	·66	2	D	2	·19		3	D	31	·72	**74**	5	Jr	30	·25	6	F	28	·78
3	S	23○	·49	5	O	23	·02	6	N	21	·56	1	D	21	·09	**75**	2	Jr	19	·62		4	F	18	·15	5	Mr	19●○	·68
7	S	12●○	·86	2	O	12	·39	3	N	10	·92	5	D	10	·45	**76**	6	Jr	8	·98		1	F	7	·51	3	Mr	8	·04
5	S	1●	·23	6	S	30	·76	1	O	30	·29	2	N	28	·82		4	D	28	·35	**77**	5	Jr	26○	·88	7	F	25	·41

TABLE X-

⨀'s Anom col. 6: + 29·53059 | + 59·06117 | + 88·59176 | + 118·12235

☾'s Anom col. 7: + 1·976 | + 3·958 | + 5·928 | + 7·904

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year: Month and day A.D.	Commencement of Solar Year: Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha: Week-day	Month	Day	Fraction	Jyeshta: Week-day	Month	Day	Fraction	Ashada: Week-day	Month	Day	Fraction	Sravana: Week-day	Month	Day	Fraction	Bhadrapada: Week-day	Month	Day	Fraction
4178	1134	999	23M	·6638	3·2794	2·674	**1077**	1	1	Mr	26	·94	3	Ap	25	·47	6	Je	23	·53	1	Jl	23○	·06	2	Au	21	·60
													5	My	25	·00												
4179	1135	1000	23M	·9226	21·9183	0·807	**1078**	2	7	Ap	14	·84	2	My	14	·37	3	Je	12	·90	5	Jl	12○	·43	6	Au	10	·96
4180	1136	1001	24M	·1813	11·0266	24·519	**1079**	3	5	Ap	4	·21	6	My	3	·74	1	Je	2	·27	2	Jl	1●	·80	4	Jl	31	·33
4181	1137	1002	23M	·4401	0·1349	20·676	**1080**	4	2	Mr	23	·57	5	My	21○	·64	7	Je	20●	·17	1	Jl	19	·70	3	Au	18	·23
									4	Ap	22	·10																
4182	1138	1003	23M	·6988	18·7738	18·809	**1081**	6	1	Ap	11	·47	3	My	11○	·00	4	Je	9	·53	6	Jl	9	·06	7	Au	7	·59
4183	1139	1004	23M	·9576	7·8820	14·967	**1082**	7	5	Mr	31	·84	[illegible]	Ap	30○	·37	1	My	29	·90	3	Je	28	·43	4	Jl	27	·96
																									6	Au	26	·49
4184	1140	1005	24M	·2164	26·5209	13·100	**1083**	1	4	Ap	19	·74	6	My	19	·27	7	Je	17	·80	2	Jl	17	·33	3	Au	15	·86
4185	1141	1006	23M	·4751	15·6292	9·257	**1084**	2	2	Ap	8	·10	3	My	7	·63	5	Je	6	·16	6	Jl	5	·70	1	Au	24	·23
4186	1142	1007	23M	·7339	4·7375	5·414	**1085**	4	6	Mr	28	·47	1	Ap	27	·00	2	My	26	·53	5	Jl	24	·59	7	Au	23○	·12
																	4	Je	25	·06								
4187	1143	1008	23M	·9926	23·3764	3·548	**1086**	5	5	Ap	16	·37	6	My	15	·90	1	Je	14	·43	2	Jl	13	·96	4	Au	12●○	·49
4188	1144	1009	24M	·2514	12·4847	27·259	**1087**	6	2	Ap	5	·74	4	My	5	·27	5	Je	3	·80	7	Jl	3	·33	1	Au	1●	·86
4189	1145	1010	23M	·5101	1·5930	23·417	**1088**	7	7	Mr	25	·10	1	Ap	23	·63	4	Je	21○	·69	6	Jl	21	·22	7	Au	19	·76
													3	My	23	·16												
4190	1146	1011	23M	·7689	20·2319	21·550	**1089**	2	6	Ap	13	·00	7	My	12	·53	2	Je	11●○	·06	3	Jl	10	·59	5	Au	9	·12
4191	1147	1012	24M	·0277	9·3402	17·707	**1090**	3	3	Ap	2	·37	4	My	1	·90	6	My	31	·43	7	Je	29	·96	2	Jl	29	·49
4192	1148	1013	24M	·2864	27·9791	15·840	**1091**	4	2	Ap	21○	·26	3	My	20●	·80	5	Je	19	·33	6	Jl	18	·86	1	Au	17	·39
4193	1149	1014	23M	·5452	17·0874	11·998	**1092**	5	6	Ap	9○	·63	1	My	9	·16	2	Je	7	·69	4	Jl	7	·22	5	Au	5	·75
4194	1150	1015	23M	·8039	6·1957	8·155	**1093**	7	4	Mr	30○	·00	5	Ap	28	·53	7	My	28	·06	1	Je	26	·59	4	Au	24	·65
																					3	Jl	26	.12				
4195	1151	1016	24M	·0627	24·8346	6·288	**1094**	1	2	Ap	17	·90	4	My	17	·43	5	Je	15	·96	7	Jl	15	·49	2	Au	14	·02
4196	1152	1017	24M	·3214	13·9429	2·445	**1095**	2	7	Ap	7	·26	1	My	6	·79	3	Je	5	·32	4	Jl	4	·86	6	Au	3○	·39
4197	1153	1018	23M	·5802	3·0512	26·157	**1096**	3	4	Mr	26	·63	6	Ap	25	·16	2	Je	23	·22	3	Jl	22○	·75	5	Au	21	·28
													7	My	24	·69												
4198	1154	1019	23M	·8390	21·6901	24·291	**1097**	5	3	Ap	14	·53	5	My	14	·06	6	Je	12	·59	1	Jl	12	·12	2	Au	10	·65
4199	1155	1020	24M	·0977	10·7984	20·448	**1098**	6	7	Ap	3	·90	2	My	3	·43	3	Je	1	·96	5	Jl	1	·49	7	Jl	31	·02
4200	1156	1021	24M	·3565	29·4372	18·581	**1099**	7	5	Mr	24	·26	1	My	22○	·32	2	Je	20	·85	4	Jl	20	·38	5	Au	18	·92
									6	Ap	22	·79																
4201	1157	1022	23M	·6152	18·5456	14·739	**1100**	1	4	Ap	11	·16	5	My	10●○	·69	7	Je	9	·22	1	Jl	8	·75	3	Au	7	·28
4202	1158	1023	23M	·8740	7·6538	10·896	**1101**	3	1	Mr	31	·53	3	Ap	30●	·06	4	My	29	·59	6	Je	28	·12	7	Jl	27	·65
																									2	Au	26	·18
4203	1159	1024	24M	·1327	26·2927	9·029	**1102**	4	7	Ap	19●	·42	1	My	18	·96	3	Je	17	·49	5	Jl	17	·02	6	Au	15	·55
4204	1160	1025	24M	·3915	15·4010	5·186	**1103**	5	4	Ap	8	·79	6	My	8	·32	7	Je	6	·85	2	Jl	6	·38	3	Au	4	·91
4205	1161	1026	23M	·6502	4·5093	1·344	**1104**	6	2	Mr	28	·16	3	Ap	26	·69	5	My	26	·22	1	Jl	24	·28	2	Au	22○	·81
																	6	Je	24	·75								
4206	1162	1027	23M	·9090	23·1482	27·031	**1105**	1	1	Ap	16	·06	2	My	15	·59	4	Je	14	·12	5	Jl	13	·65	7	Au	12	·18
4207	1163	1028	24M	·1678	12·2565	23·189	**1106**	2	5	Ap	5	·42	6	My	4	·95	1	Je	3	·48	3	Jl	3○	·02	4	Au	1●	·55
4208	1164	1029	24M	·4265	1·3648	19·346	**1107**	3	2	Mr	25	·79	4	Ap	24	·32	7	Je	22○	·38	1	Jl	21	·91	3	Au	20	·44
													5	My	23	·85												
4209	1165	1030	23M	·6853	20·0037	17·479	**1108**	4	1	Ap	12	·69	3	My	12	·22	4	Je	10●	·75	6	Jl	10	·28	7	Au	8	·81
4210	1166	1031	23M	·9440	9·1120	13·636	**1109**	6	6	Ap	2	·06	7	My	1○	·59	2	My	31●	·12	3	Je	22	·65	5	Jl	29	·18
4211	1167	1032	24M	·2028	27·7509	11·770	**1110**	7	4	Ap	20○	·95	6	My	20	·48	1	Je	19	·01	2	Jl	18	·54	4	Au	17	·08
4212	1168	1033	24M	·4615	16·8592	7·927	**1111**	1	2	Ap	10○	·32	3	My	9	·85	5	Je	8	·38	6	Jl	7	·91	1	Au	6	·44
4213	1169	1034	23M	·7203	5·9675	4·084	**1112**	2	6	Mr	29	·69	1	Ap	28	·22	2	My	27	·75	4	Je	26	·28	7	Au	24	·34
																					5	Jl	25	·81				
4214	1170	1035	23M	·9791	24·6064	2·217	**1113**	4	5	Ap	17	·58	7	My	17	·12	1	Je	15	·65	3	Jl	15	·18	4	Au	13○	·71
4215	1171	1036	24M	·2378	13·7147	25·929	**1114**	5	2	Ap	6	·95	4	My	6	·48	6	Je	5	·01	7	Jl	4	·54	2	Au	3○	·07
4216	1172	1037	24M	·4966	2·8230	22·087	**1115**	6	7	Mr	27	·32	1	Ap	25	·85	4	Je	23	·91	6	Jl	23●○	·44	7	Au	21	·97
													3	My	25	·38												

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{ +324·83647 { +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 { + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4	S	20	·13	5	O	19	·66	7	N	18	·19	1	D	17	·72	**78**	3	Jr	16○	·25		4	F	14	·78	6	Mr	16	·31
1	S	9	·49	3	O	9	·02	4	N	7	·55	6	D	7	·08	**79**	7	Jr	5○	·61		2	F	4	·15	3	Mr	5	·68
5	Au	29	·86	7	S	28	·39	1	O	27	·92	3	N	26	·45		4	D	25●	·98	**80**	6	Jr	24	·51	1	F	23	·04
4	S	16	·76	6	O	16	·29	7	N	14○	·82	2	D	14●	·35	**81**	3	Jr	12	·88		5	F	11	·41	6	Mr	12	·94
2	S	6	·12	3	O	5	·66	5	N	4○	·19	6	D	3●	·72	**82**	1	Jr	2	·25		2	Jr	31	·78	4	Mr	2	·31
1	S	25	·02	2	O	24○	·55	4	N	23	·08	5	D	22	·61	**83**	7	Jr	21	·14		1	F	19	·68	3	Mr	21	·21
5	S	14	·39	6	O	13●	·92	1	N	12	·45	2	D	11	·98	**84**	4	Jr	10	·51		6	F	9	·04	7	Mr	9○	·57
2	S	20○	·76	4	O	2	·29	5	O	31	·82	7	N	30	·35		1	D	29	·88	**85**	3	Jr	82	·41	4	F	26○	·94
1	S	21	·65	3	O	21	·18	4	N	19	·72	6	D	19	·25	**86**	7	Jr	17	·78		2	F	16○	·31	3	Mr	17	·84
6	S	11	·92	7	O	10	·55	2	N	9	·08	3	D	8	·61	**87**	5	Jr	7	·14		6	F	5●	·67	1	Mr	7	·20
3	Au	31	·39	4	S	29	·92	6	O	29	·45	7	N	27	·98		2	D	27○	·51	**88**	4	Jr	26	·04	5	F	24	·57
2	S	18	·29	3	O	17	·82	5	N	16	·35	6	D	15○	·88	**89**	1	Jr	14	·41		2	F	12	·94	4	Mr	14	·47
6	S	7	·65	1	O	7	·18	2	N	5	·71	4	D	5○	·24	**90**	5	Jr	3	·78		7	F	2	·31	1	Mr	3	·84
{ 4	Au	28	·02	7	O	26	·08	1	N	24●	·61	3	D	24	·14	**91**	4	Jr	22	·67		6	F	21	·20	7	Mr	22	·73
{ 5	S	26	·55																										
2	S	15	·92	4	O	15○	·45	5	N	13	·98	7	D	13	·51	**92**	2	Jr	12	·04		3	F	10	·57	5	Mr	11	·10
7	S	4	·28	1	O	3○	·82	3	N	2	·35	4	D	1	·88		6	D	31	·41	**93**	7	Jr	29	·94	2	F	28	·47
6	S	23●○	·18	7	O	22	·71	2	N	21	·24	3	D	20	·77	**94**	5	Jr	19	·30		6	F	17	·84	1	Mr	19●	·37
3	S	12	·55	5	O	12	·08	6	N	10	·61	1	D	10	·14	**95**	2	Jr	8	·67		4	F	7○	·20	5	Mr	8	·73
7	S	1	·92	2	O	1	·45	3	O	30	·98	5	N	29	·51		7	D	29	·04	**96**	1	Jr	27○	·57	3	F	26	·10
6	S	19	·81	1	O	19	·34	2	N	17	·88	4	D	17	·41	**97**	5	Jr	15●○	·94		7	F	14	·47	2	Mr	16	·00
4	S	9	·18	5	O	8	·71	7	N	7	·24	1	D	6	·77	**98**	3	Jr	5●	·30		4	F	3	·83	6	Mr	5	·36
1	Au	29	·55	3	S	28	·08	4	O	27	·61	6	N	26○	·14		7	D	25	·67	**99**	2	Jr	24	·20	3	F	22	·73
7	S	17	·45	1	O	16	·98	3	N	15○	·51	5	D	15	·04	**11**	6	Jr	13	·57	**00**	1	F	12	·10	2	Mr	12	·63
4	S	5	·81	6	O	5	·34	7	N	3○	·87	2	D	3	·40	**01**	3	Jr	1	·94		5	Jr	31	·47	7	Mr	2	·00
3	S	24	·71	5	O	24●	·24	6	N	22	·77	1	D	22	·30	**02**	2	Jr	20	·83		4	F	19	·36	5	Mr	20○	·89
1	S	14○	·08	2	O	13	·61	4	N	12	·14	5	D	11	·67	**03**	7	Jr	10	·20		1	F	8	·73	3	Mr	10●○	·26
5	S	3○	·44	6	O	2	·98	1	N	1	·51	3	D	1	·04		4	D	30	·57	**04**	6	Jr	29	·10	7	F	27○	·63
4	S	21	·34	5	O	20	·87	7	N	19	·40	1	D	18	·93	**05**	3	Jr	17	·46		5	F	16	·00	6	Mr	17	·56
1	S	10	·71	3	O	10	·24	4	N	8	·77	6	D	8	·30	**06**	7	Jr	6○	·83		2	F	5	·36	3	Mr	6	·89
6	Au	31	·08	7	S	29	·61	2	O	29	·14	3	N	27	·67		5	D	27●○	·20	**07**	6	Jr	25	·73	1	F	24	·26
4	S	18	·97	6	O	18	·50	1	N	17	·04	2	D	16●○	·56	**08**	4	Jr	15	·10		5	F	13	·63	7	Mr	14	·16
2	S	7	·34	3	O	6	·87	5	N	5	·40	6	D	4	·93	**09**	1	Jr	3	·46		2	F	1	·99	4	Mr	3	·52
{ 6	Au	27	·71	2	O	25○	·77	4	N	24●	·30	5	D	23	·83	**10**	7	Jr	22	·36		1	F	20	·89	3	Mr	22	·42
{ 1	S	26	·24																										
5	S	15	·61	7	O	15●○	·14	1	N	13	·67	3	D	13	·20	**11**	4	Jr	11	·73		6	F	10	·26	7	Mr	11	·79
2	S	4	·97	4	O	4○	·50	6	N	3	·03	7	D	2	·56	**12**	2	Jr	1	·10		3	Jr	30	·63	5	F	29	·16
1	S	22	·87	3	O	22	·40	4	N	20	·93	6	D	20	·46	**13**	7	Jr	18	·99		2	F	17○	·52	4	Mr	19●	·05
6	S	12	·24	7	O	11	·77	2	N	10	·30	3	D	9	·83	**14**	5	Jr	8	·36		6	F	6○	·89	1	Mr	8	·42
3	S	1	·60	5	O	1	·14	6	O	30	·67	1	N	29	·20		2	D	28	·73	**15**	4	Jr	27○	·26	5	F	25	·79
2	S	20	·50	4	O	20	·03	5	N	18	·56	7	D	18	·09	**16**	1	Jr	16	·62		3	F	15	·16	4	Mr	15	·69

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year: Month and day A.D.	Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Week-day of 1st January	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4217	1173	1038	23M	·7553	21·4619	20·220	**1116**	7	6	Ap	14	·22	7	My	13	·75	2	Je	12	·28	3	Jl	11	·81	5	Au	10	·34
4218	1174	1039	23M	·0141	10·5702	16·377	**1117**	2	3	Ap	3	·58	5	My	3	·11	6	Je	1○	·64	1	Jl	1	·18	2	Jl	30	·71
4219	1175	1040	24M	·2728	29·2090	14·510	**1118**	3	2	Ap	22	·48	4	My	22●○	·01	5	Je	20	·54	7	Jl	20	·07	1	Au	18	·60
4220	1176	1041	24M	·5316	18·3173	10·668	**1119**	4	6	Ap	11	·85	1	My	11●	·38	2	Je	9	·91	4	Jl	9	·44	5	Au	7	·97
4221	1177	1042	23M	·7904	7·4256	6·825	**1120**	5	4	Mr	31○	·22	15	Ap	29	·75	7	My	29	·28	1	Je	27	·81	{ 3	Jl	27	·34
																									{ 4	Au	25	·87
4222	1178	1043	24M	·0491	26·0645	4·958	**1121**	7	3	Ap	19	·11	4	My	18	·64	6	Je	17	·17	7	Jl	16	·70	2	Au	15	·24
4223	1179	1044	24M	·3079	15·1728	1·115	**1122**	1	7	Ap	8	48	2	My	8	·01	3	Je	6	·54	5	Jl	6	·07	6	Au	4	·60
4224	1180	1045	24M	·5666	4·2811	24·827	**1123**	2	4	Mr	28	·85	6	Ap	27	·38	{ 7	My	26	·91	3	Jl	24	·97	5	Au	23●	·50
																	{ 2	Je	25	·44								
4225	1181	1046	23M	·8254	22·9200	22·960	**1124**	3	3	Ap	15	·74	5	My	15	·27	6	Jo	13	·80	1	Jl	13○	·34	2	Au	11●	·87
4226	1182	1047	24M	·0841	12·0283	19·118	**1125**	5	1	Ap	5	·11	2	My	4	·64	4	Je	3	·17	5	Jl	2○	·70	7	Au	1	·23
4227	1183	1048	24M	·3429	1·1366	15·275	**1126**	6	5	Mr	25	·48	{ 7	Ap	24	·01	3	Je	22●○	·07	4	Jl	21	·60	6	Au	20	·13
													{ 1	My	23	·54												
4228	1184	1049	24M	·6016	19·7755	13·408	**1127**	7	4	Ap	13	·38	5	My	12○	·91	7	Je	11	·44	1	Jl	10	·97	3	Au	9	·50
4229	1185	1050	23M	·8604	8·8838	9·565	**1128**	1	1	Ap	1	·74	3	My	1○	·27	4	My	30	·80	6	Je	29	·34	7	Jl	28	·87
4230	1186	1051	24M	·1192	27·5227	7·699	**1129**	3	7	Ap	20●○	·64	2	My	20	·17	3	Je	18	·70	5	Jl	18	·23	6	Au	16	·76
4231	1187	1052	24M	·3779	16·6310	3·856	**1130**	4	5	Ap	10	·01	6	My	9	·54	1	Je	8	·07	2	Jl	7	·60	4	Au	6	·13
4232	1188	1053	24M	·6367	5·7393	0·013	**1131**	5	2	Mr	30	·38	3	Ap	28	·91	{ 5	My	28	·44	1	Jl	26	·50	3	Au	25○	·03
																	{ 6	Je	26	·97								
4233	1189	1054	23M	·8954	24·3782	25·701	**1132**	6	1	Ap	17	·27	2	My	16	·80	4	Je	15	·33	5	Jl	14	·86	7	Au	13○	·40
4234	1190	1055	24M	·1542	13·4865	21·858	**1133**	1	5	Ap	6	·64	7	My	6	·17	1	Je	4	·70	3	Jl	4	·23	4	Au	2●○	·76
4235	1191	1056	24M	·4129	2·5948	18·015	**1134**	2	3	Mr	27	·01	{ 4	Ap	25	·54	7	Je	23	·60	2	Jl	23●	·13	3	Au	21	·66
													{ 6	My	25	·07												
4236	1992	1057	24M	·6717	21·2336	16·149	**1135**	3	1	Ap	14	·90	3	My	14	·44	4	Je	12○	·97	6	Jl	12	·50	1	Au	11	·03
4237	1193	1058	23M	·9305	10·3419	12·306	**1136**	4	6	Ap	3	·27	7	My	2	·80	2	Je	1○	·33	3	Je	30	·86	5	Jl	30	·39
4238	1194	1059	24M	·1892	28·9808	10·439	**1137**	6	5	Ap	22	·17	6	My	21	·70	1	Je	20	·23	2	Jl	19	·76	4	Au	18	·29
4239	1195	1060	24M	·4480	18·0891	6·596	**1138**	7	2	Ap	11○	·54	4	My	11	·07	5	Je	9	·60	7	Jl	9	·13	1	Au	7	·66
4240	1196	1061	24M	·7067	7·1974	2·754	**1139**	1	6	Mr	31○	·90	1	Ap	30	·43	2	My	29	·96	{ 4	Je	28	·50	7	Au	26	·56
																					{ 6	Jl	28	·03				
4241	1197	62	23M	·9655	25·8363	0·887	**1140**	2	5	Ap	18	·80	7	My	18	·33	1	Je	16	·86	3	Jl	16	·39	4	Au	14	·92
4242	1198	1063	24M	·2242	14·9446	24·599	**1141**	4	3	Ap	8	·17	4	My	7	·70	6	Je	6	·23	7	Jl	5	·76	2	Au	4	·29
4243	1199	1064	24M	·4830	4·0529	20·756	**1142**	5	7	Mr	28	·54	2	Ap	27	·07	{ 3	My	26	·60	6	Jl	24○	·66	1	Au	23	·19
																	{ 5	Je	25	·13								
4244	1200	1065	24M	·7418	22·6918	18·889	**1143**	6	6	Ap	16	·43	7	My	15	·96	2	Je	14	·49	4	Jl	14○	·02	5	Au	12●	·56
4245	1201	1066	24M	·0005	11·8001	15·047	**1144**	7	3	Ap	4	·80	5	My	4	·33	6	Je	2	·86	1	Jl	2○	·39	2	Jl	31	·92
4246	1202	1067	24M	2593	0·9084	11·204	**1145**	2	{ 1	Mr	25	·17	4	My	23○	·23	5	Je	21●	·76	7	Jl	21	·29	1	Au	19	·82
									{ 2	Ap	23	·70																
4247	1203	1068	24M	·5180	19·5473	9·337	**1146**	3	7	Ap	13	·06	1	My	12○	·60	3	Je	11●	·13	4	Jl	10	·66	6	Au	9	·19
4248	1204	1069	24M	·7768	8·6555	5·494	**1147**	4	4	Ap	2	·43	5	My	1○	·96	7	My	31	·49	2	Je	30	·02	{ 3	Jl	29	·55
																									{ 5	Au	28	·08
4249	1205	1070	24M	·0355	27·2945	3·628	**1148**	5	3	Ap	20●	·33	4	My	19	·86	6	Je	18	·39	7	Jl	17	·92	2	Au	16	·45
4250	1206	1071	24M	·2943	16·4028	27·339	**1149**	7	7	Ap	9	·70	2	My	9	·23	3	Je	7	·76	5	Jl	7	·29	6	Au	5	·82
4251	1207	1072	24M	·5530	5·5111	23·497	**1150**	1	5	Mr	30	·06	6	Ap	28	·59	{ 1	My	28	·12	4	Jl	26	·18	5	Au	24○	·72
																	{ 2	Je	26	·66								
4252	1208	1073	24M	·8118	24·1500	21·630	**1151**	2	3	Ap	17	·96	5	My	17	·49	7	Je	16	·02	1	Jl	15	·55	3	Au	14○	·08
4253	1209	1074	24M	·0706	13·2583	17·787	**1152**	3	1	Ap	6	·33	2	My	5	·86	4	Je	4	·39	5	Jl	3	·92	7	Au	2	·45
4254	1210	1075	24M	·3293	2·3666	13·944	**1153**	5	5	Mr	26	·70	{ 7	Ap	25	·23	3	Je	23○	·29	4	Jl	22●	·82	6	Au	21	·35
													{ 1	My	24	·76												
4255	1211	1076	24M	·5881	21·0054	12·078	**1154**	6	4	Ap	14	·59	6	My	14	·12	7	Je	12○	·65	2	Jl	12	·18	3	Au	10	·72

Surya Siddhanta

Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77429	+ 295·30588	+324·83647 +354·36705
+ 9·880	+ 11·856	+ 13·832	+ 15·808	+ 17·784	+ 19·760	+ 21·736 + 23·712

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	8	·87	1	O	8	·40	2	N	6	·93	4	D	6○	·46	**17**	5	Jr	4	·99		7	F	3	·52	2	Mr	5	·05
4	Au	29	·24	5	S	27	·77	7	O	27	·30	1	N	25○	·83		3	D	25	·36	**18**	4	Jr	23	·89	{ 6	F	22	·42
																										{ 7	Mr	23	·95
3	S	17	·13	4	O	16	·66	6	N	15●○	·20	7	D	14	·73	**19**	2	Jr	13	·26		3	F	11	·79	5	Mr	13	·32
7	S	6	·50	2	O	6	·03	3	N	4	·56	5	D	4	·09	**20**	6	Jr	2	·62		1	F	1	·15	2	Mr	1	·68
6	S	24○	·40	7	O	23●	·93	2	N	22	·46	3	D	21	·99	**21**	5	Jr	20	·52		7	F	19	·05	1	Mr	20○	·58
3	S	13○	·77	5	O	13	·30	6	N	11	·83	1	D	11	·36	**22**	2	Jr	9	·89		4	F	8	·42	5	Mr	9●○	·95
1	S	3○	·13	2	O	2	·66	4	N	1	·19	5	N	30	·72		7	D	30	·26	**23**	1	Jr	28	·79	3	F	27	·32
7	S	22	·03	1	O	21	·56	3	N	20	·09	4	D	19	·62	**24**	6	Jr	18○	·15		7	F	16	·68	2	Mr	17	·21
4	S	10	·40	5	O	9	·93	7	N	8	·46	1	D	7	·99	**25**	3	Jr	6○	·52		5	F	5	·05	6	Mr	6	·58
1	Au	30	·76	3	S	29	·30	4	O	28	·83	6	N	27	·36		7	D	26○	·89	**26**	2	Jr	25	·42	3	F	23	·95
7	S	18	·66	2	O	18	·19	3	N	16	·72	5	D	16	·25	**27**	6	Jr	14	·78		1	F	13	·32	2	Mr	14	·85
5	S	8	·03	6	O	7	·56	1	N	6○	·09	2	D	5	·62	**28**	4	Jr	4	·15		5	F	2	·68	7	Mr	3	·21
{ 2	Au	27	·40	5	O	25○	·46	6	N	23	·99	1	D	23	·52	**29**	3	Jr	22	·05		4	F	20	·58	6	Mr	22	·11
{ 3	S	25	·93																										
1	S	15	·29	2	O	14●○	·82	4	N	13	·36	5	D	12	·89	**30**	7	Jr	11	·42		1	F	9	·95	3	Mr	11	·48
5	S	4	·66	7	O	4●	·19	1	N	2	·72	3	D	2	·25		4	D	31	·78	**31**	6	Jr	30	·31	7	F	28○	·84
4	S	23●	·56	6	O	23	·09	7	N	21	·62	2	D	21	·15	**32**	3	Jr	19	·68		5	F	18○	·21	6	Mr	18	·74
1	S	11	·93	3	O	11	·46	4	N	9	·99	6	D	9	·52	**33**	1	Jr	8	·05		2	F	6○	·58	4	Mr	8	·11
6	S	1	·29	7	S	30	·82	2	O	30	·35	3	N	28	·88		5	D	28	·42	**34**	6	Jr	26●	·95	1	F	25	·48
5	S	20	·19	6	O	19	·72	1	N	18	·25	2	D	17○	·78	**35**	4	Jr	16●	·31		5	F	14	·84	7	Mr	16	·37
2	S	9	·56	4	O	9	·09	5	N	7	·62	7	D	7○	·15	**36**	1	Jr	5	·68		3	F	4	·21	4	Mr	4	·74
6	Au	28	·92	1	S	27	·46	2	O	26	·99	4	N	25○	·52		6	D	25	·05	**37**	7	Jr	23	·58	{ 2	F	22	·11
																										{ 3	Mr	23	·64
5	S	16	·82	7	O	16	·35	1	N	14●	·88	3	D	14	·41	**38**	4	Jr	12	·94		6	F	11	·48	1	Mr	13	·01
3	S	6	·19	4	O	5○	·72	6	N	4	·25	7	D	3	·78	**39**	2	Jr	2	·31		3	Jr	31	·84	5	Mr	2	·37
2	S	25○	·09	3	O	24	·62	5	N	23	·15	6	D	22	·68	**40**	1	Jr	21	·21		2	F	19	·74	4	Mr	20○	·27
6	S	13●○	·45	7	O	12	·98	2	N	11	·52	4	D	11	·05	**41**	5	Jr	9	·58		7	F	8	·11	1	Mr	9●	·64
3	S	2●	·82	5	O	2	·35	6	O	31	·88	1	N	30	·41		2	D	29	·94	**42**	4	Jr	28○	·47	6	F	27	·00
2	S	21	·72	4	O	21	·25	5	N	19	·78	7	D	19	·31	**43**	1	Jr	17○	·84		3	F	16	·37	4	Mr	17	·90
7	S	11	·09	1	O	10	·62	3	N	9	·15	4	D	8	·68	**44**	6	Jr	7○	·21		7	F	5	·74	2	Mr	6	·27
4	Au	30	·45	5	S	28	·98	7	O	28	·51	2	N	27	·04		3	D	26●	·58	**45**	5	Jr	25	·11	6	F	23	·64
3	S	18	·35	4	O	17	·88	6	N	16○	·41	7	D	15	·94	**46**	2	Jr	14	·47		4	F	13	·00	5	Mr	14	·53
7	S	7	·72	2	O	7	·25	3	N	5○	·78	5	D	5	·31	**47**	6	Jr	3	·84		1	F	2	·37	2	Mr	3	·90
6	S	26	·62	1	O	26●○	·15	2	N	24	·68	4	D	24	·21	**48**	5	Jr	22	·74		7	F	21	·27	1	Mr	21	·80
3	S	14	·98	5	O	14	·51	7	N	13	·04	1	D	12	·57	**49**	3	Jr	11	·10		4	F	9	·64	6	Mr	11○	·17
1	S	4○	·35	2	O	3	·88	4	N	2	·41	5	D	1	·94		7	D	31	·47	**50**	2	Jr	30	·00	3	F	28○	·53
7	S	23	·25	1	O	22	·78	3	N	21	·31	4	D	20	·84	**51**	6	Jr	19	·37		7	F	17●○	·90	2	Mr	19	·43
4	S	12	·61	6	O	12	·14	7	N	10	·68	2	D	10	·21	**52**	3	Jr	8	·74		5	F	7●	·27	6	Mr	7	·80
1	Au	31	·98	3	S	30	·51	5	O	30	·04	6	N	28	·57		1	D	28○	·10	**53**	2	Jr	26●	·63	4	F	25	·16
7	S	19	·88	2	O	19	·41	3	N	17	·94	5	D	17○	·47	**54**	7	Jr	16	·00		1	F	14	·53	3	Mr	16	·06
5	S	9	·25	6	O	8	·78	1	N	7	·31	2	D	6○	·84	**55**	4	Jr	5	·37		5	F	3	·90	7	Mr	5	·43

Kaliyuga	Vikrama Era	Saka Era	Commencement of Solar Year: Month and day A.D.	Fraction of day	First New-Moon in Solar Year	Anomaly of first New-Moon	A.D.	Week-day of 1st January	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4256	1212	1077	24M	·8468	10·1137	8·235	**1155**	7	1	Ap	3	·96	3	My	3	·49	5	Je	2●○	·02	6	Jl	1	·55	1	Jl	31	·08
4257	1213	1078	24M	·1056	28·7526	6·368	**1156**	1	7	Ap	21○	·86	2	My	21●	·39	3	Je	19	·92	5	Jl	19	·45	6	Au	17	·98
4258	1214	1079	24M	·3643	17·8609	2·525	**1157**	3	5	Ap	11○	·22	6	My	10	·76	1	Je	9	·29	2	Jl	8	·82	4	Au	7	·35
4259	1215	1080	24M	·6231	6·9692	26·237	**1158**	4	2	Mr	31○	·59	4	Ap	30	·12	5	My	29	·65	7	Je	28	·18	3	Au	26	·24
																					1	Jl	27	·71				
4260	1216	1081	24M	·8819	25·6081	24·370	**1159**	5	1	Ap	19	·49	3	My	19	·02	4	Je	17	·55	6	Jl	17	·08	7	Au	15	·61
4261	1217	1082	24M	·1406	14·7164	20·527	**1160**	6	5	Ap	7	·86	7	My	7	·39	1	Je	5	·92	3	Jl	5	·45	4	Au	3○	·98
4262	1218	1083	24M	·3994	3·8247	16·685	**1161**	1	3	Mr	28	·22	4	Ap	26	·75	6	My	26	·28	2	Jl	24○	·35	3	Au	22	·88
																	7	Je	24	·82								
4263	1219	1084	24M	·6581	22·4636	14·818	**1162**	2	2	Ap	16	·12	3	My	15	·65	5	Je	14	·18	6	Jl	13●○	·71	1	Au	12	·24
4264	1220	1085	24M	·9169	11·5719	10·975	**1163**	3	6	Ap	5	·49	1	My	5	·02	2	Je	3○	·55	4	Jl	3●	·08	5	Au	1	·61
4265	1221	1086	24M	·1756	0·6802	7·133	**1164**	4	3	Mr	24	·86	6	My	22○	·92	1	Je	21●	·45	2	Jl	20	·98	4	Au	19	·51
									5	Ap	23	·39																
4266	1222	1087	24M	·4344	19·3191	5·266	**1165**	6	2	Ap	12	·75	4	My	12○	·28	5	Je	10	·81	7	Jl	10	·34	1	Au	8	·88
4267	1223	1088	24M	·6932	8·4273	1·423	**1166**	7	7	Ap	2	·12	1	My	1●	·65	3	My	31	·18	4	Je	29	·71	6	Jl	29	·24
																									7	Au	27	·77
4268	1224	1089	24M	·9519	27·0663	27·111	**1167**	1	6	Ap	21●	·02	7	My	20	·55	2	Je	19	·08	3	Jl	18	·61	5	Au	17	·14
4269	1225	1090	24M	·2107	16·1746	23·268	**1168**	2	3	Ap	9	·38	4	My	8	·92	6	Je	7	·45	7	Jl	6	·98	2	Au	5	·51
4270	1226	1091	24M	·4694	5·2829	19·426	**1169**	4	7	Mr	29	·75	2	Ap	28	·28	3	My	27	·81	5	Je	26	·34	1	Au	24●○	·40
																					6	Jl	25	·87				
4271	1227	1092	24M	·7282	23·9218	17·559	**1170**	5	6	Ap	17	·65	1	My	17	·18	2	Je	15	·71	4	Jl	15	·24	5	Au	13	·77
4272	1228	1093	24M	·9869	13·0301	13·716	**1171**	6	4	Ap	7	·02	5	My	6	·55	7	Je	5	·08	1	Jl	4○	·61	3	Au	3	·14
4273	1229	1094	24M	·2457	2·1384	9·873	**1172**	7	1	Mr	26	·38	2	Ap	24	·91	5	Je	22○	·98	7	Jl	22	·51	2	Au	21	·04
													4	My	24	·44												
4274	1230	1095	24M	·5044	20·7772	8·006	**1173**	2	7	Ap	14	·28	1	My	13	·81	3	Je	12●○	·34	4	Jl	11	·87	6	Au	10	·40
4275	1231	1096	24M	·7632	9·8855	4·164	**1174**	3	4	Ap	3	·65	6	My	3○	·18	7	Je	1●	·71	2	Jl	1	·24	3	Jl	30	·77
4276	1232	1097	24M	·0220	28·5244	2·297	**1175**	4	3	Ap	22○	·55	5	My	22	·08	6	Je	20	·61	1	Jl	20	·14	2	Au	18	·67
4277	1233	1098	24M	·2807	17·6327	26·008	**1176**	5	7	Ap	10●○	·91	2	My	10	·44	3	Je	8	·97	5	Jl	8	·50	7	Au	7	·04
4278	1234	1099	24M	·5395	6·7410	22·171	**1177**	7	5	Mr	31	·28	6	Ap	29	·81	1	My	29	·34	2	Je	27	·87	5	Au	25	·93
																					4	Jl	27	·40				
4279	1235	1100	24M	·7982	25·3799	20·299	**1178**	1	4	Ap	19	·18	5	My	18	·71	7	Je	17	·24	1	Jl	16	·77	3	Au	15○	·30
4280	1236	1101	25M	·0570	14·4882	16·457	**1179**	2	1	Ap	8	·54	3	My	8	·08	4	Je	6	·61	6	Jl	6	·14	7	Au	4○	·67
4281	1237	1102	24M	·3157	3·5965	12·614	**1180**	3	5	Mr	27	·91	7	Ap	26	·44	1	My	25	·97	5	Jl	24●○	·03	6	Au	22	·56
																	3	Je	24	·50								
4282	1238	1103	24M	·5745	22·2354	10·747	**1181**	5	4	Ap	15	·81	6	My	15	·34	7	Je	13	·87	2	Jl	13	·40	3	Au	11	·93
4283	1239	1104	24M	·8333	11·3437	6·904	**1182**	6	2	Ap	5	·18	3	My	4	·71	5	Je	3○	·24	6	Jl	2	·77	1	Au	1	·30
4284	1240	1105	25M	·0920	0·4520	3·062	**1183**	7	6	Mr	25	·54	2	My	23●○	·60	4	Je	22	·14	5	Jl	21	·67	7	Au	20	·20
									1	Ap	24	·07																
4285	1241	1106	24M	·3508	19·0909	1·195	**1184**	1	5	Ap	12	·44	6	My	11	·97	1	Je	10	·50	3	Jl	10	·03	4	Au	8	·56
4286	1242	1107	24M	·6095	8·1992	24·907	**1185**	3	2	Ap	1○	·81	4	My	1●	·34	5	My	30	·87	7	Je	29	·40	1	Jl	28	·93
																									3	Au	27	·46
4287	1243	1108	24M	·8683	26·8381	23·040	**1186**	4	1	Ap	20	·71	3	My	20	·24	4	Je	18	·77	6	Jl	18	·30	7	Au	16	·83
4288	1244	1109	25M	·1270	15·9464	19·197	**1187**	5	6	Ap	10	·07	7	My	9	·60	2	Je	8	·13	3	Jl	7	·66	5	Au	6	·20
4289	1245	1110	24M	·3858	5·0547	15·354	**1188**	6	3	Mr	29	·44	4	Ap	27	·97	6	My	27	·50	1	Je	26	·03	4	Au	24●	·10
																					2	Jl	25	·56				
4290	1246	1111	24M	·6445	23·6936	13·488	**1189**	1	2	Ap	17	·34	3	My	16	·87	5	Je	15	·40	6	Jl	14○	·93	1	Au	13	·46
4291	1247	1112	24M	·9033	12·8019	9·645	**1190**	2	6	Ap	6	·70	1	My	6	·24	2	Je	4	·77	4	Jl	4●○	·30	5	Au	2	·83
4292	1248	1113	25M	·1621	1·9101	5·802	**1191**	3	4	Mr	27	·07	5	Ap	25	·60	1	Je	23●○	·66	3	Jl	23	·19	4	Au	21	·72
													7	My	25	·13												
4293	1249	1114	24M	·4208	20·5490	3·935	**1192**	4	2	Ap	13	·97	4	My	13○	·50	6	Je	12	·03	7	Jl	11	·56	2	Au	10	·09
4294	1250	1115	24M	·6796	9·6573	0·093	**1193**	6	7	Ap	3	·34	1	My	2○	·87	3	Je	1●	·40	4	Je	30	·93	6	Jl	30	·46

Surya Siddhanta.

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+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	Au	29	·61	4	S	28	·14	5	O	27	·67	7	N	26●	·20		1	D	25	·74	**56**	{ 3	Jr	24	·27	6	Mr	23	·33
																						{ 4	F	22	·80				
1	S	16	·51	3	O	16○	·04	4	N	14	·57	6	D	14	·10	**57**	7	Jr	12	·63		2	F	11	·16	3	Mr	12	·65
5	S	5	·88	7	O	5○	·41	1	N	3	·94	3	D	3	·47	**58**	5	Jr	2	·00		6	Jr	31	·53	1	Mr	2	·06
4	S	24○	·78	6	O	24	·31	7	N	22	·84	2	D	22	·37	**59**	3	Jr	20	·90		5	F	19	·43	6	Mr	20	·96
2	S	14	·14	3	O	13	·67	5	N	12	·20	6	D	11	·73	**60**	1	Jr	10	·26		2	F	8○	·80	4	Mr	9	·33
6	S	2●	·51	1	O	2	·04	2	O	31	·57	4	N	30	·10		5	D	29	·63	**61**	7	Jr	28●○	·16	1	F	26	·69
5	S	21	·41	6	O	20	·94	1	N	19	·47	3	D	19	·00	**62**	4	Jr	17●○	·53		6	F	16	·06	7	Mr	17	·59
2	S	10	·77	4	O	10	·30	5	N	8	·84	7	D	8	·37	**63**	1	Jr	6	·90		3	F	5	·43	4	Mr	6	·96
7	Au	31	·14	1	S	29	·67	3	O	29	·20	4	N	27○	·73		6	D	27	·26	**64**	7	Jr	25	·79	2	F	24	·32
6	S	18	·04	7	O	17	·57	2	N	16●○	·10	3	D	15	·63	**65**	5	Jr	14	·16		6	F	12	·69	1	Mr	14	·22
3	S	7	·41	4	O	6	·94	6	N	5○	·47	1	D	5	·00	**66**	2	Jr	3	·53		4	F	2	·06	5	Mr	3	·59
2	S	26	·30	3	O	25	·83	5	N	24	·36	6	D	23	·90	**67**	1	Jr	22	·43		2	F	20	·96	4	Mr	22○	·49
6	S	15○	·67	1	O	15	·20	2	N	13	·73	4	D	13	·26	**68**	5	Jr	11	·79		7	F	10	·32	1	Mr	10○	·85
4	S	4●○	·04	5	O	3	·57	7	N	2	·10	1	D	1	·63		3	D	31	·16	**69**	4	Jr	29	·69	6	F	28○	·22
2	S	22	·93	4	O	22	·47	6	N	21	·00	7	D	20	·53	**70**	2	Jr	19	·06		3	F	17	·59	5	Mr	19	·12
7	S	12	·30	1	O	11	·83	3	N	10	·36	4	D	9	·89	**71**	6	Jr	8○	·42		7	F	6	·96	2	Mr	8	·49
4	S	1	·67	6	O	1	·20	7	O	30	·73	2	N	29	·26		3	D	28○	·79	**72**	5	Jr	27●	·32	6	F	25	·85
3	S	19	·57	5	O	19	·10	6	N	17	·63	1	D	17○	·16	**73**	2	Jr	15	·69		4	F	14	·22	5	Mr	15	·75
7	S	8	·93	2	O	8	·46	4	N	7	·00	5	D	6	·53	**74**	7	Jr	5	·06		1	F	3	·59	3	Mr	5	·12
5	Au	29	·30	6	S	27	·83	1	O	27○	·36	2	N	25●	·89		4	D	25	·42	**75**	5	Jr	23	·95	{ 7	F	22	·48
																										{ 2	Mr	24	·01
4	S	17	·20	5	O	16○	·73	7	N	15	·26	1	D	14	·79	**76**	3	Jr	13	·32		4	F	11	·85	6	Mr	12	·38
1	S	5	·57	3	O	5○	·10	4	N	3	·63	6	D	3	·16	**77**	7	Jr	1	·69		2	Jr	31	·22	3	Mr	1	·75
7	S	24	·46	1	O	23	·99	3	N	22	·52	5	D	22	·06	**78**	6	Jr	20	·59		1	F	19○	·12	2	Mr	20●	·65
4	S	13●	·83	6	O	13	·36	7	N	11	·89	2	D	11	·42	**79**	3	Jr	9	·95		5	F	8○	·48	7	Mr	10	·01
2	S	3	·20	3	O	2	·73	5	N	1	·26	6	N	30	·79		1	D	30	·32	**80**	2	Jr	28○	·85	4	F	27	·38
1	S	21	·10	2	O	20	·63	4	N	19	·16	5	D	18	·69	**81**	7	Jr	17●	·22		1	F	15	·75	3	Mr	17	·28
5	S	10	·46	6	O	9	·99	1	N	8	·52	3	D	8○	·05	**82**	4	Jr	6	·58		6	F	5	·12	7	Mr	6	·65
2	Au	30	·83	4	S	29	·36	5	O	28	·89	7	N	27○	·42		1	D	26	·95	**83**	3	Jr	25	·48	5	F	24	·01
1	S	18	·73	3	O	18	·26	4	N	16●○	·79	6	D	16	·32	**84**	7	Jr	14	·85		2	F	13	·38	3	Mr	13	·91
6	S	7	·09	7	O	6	·62	2	N	5	·16	3	D	4	·69	**85**	5	Jr	3	·22		6	F	1	·75	1	Mr	3	·28
4	S	25○	·99	6	O	25●	·52	1	N	24	·05	2	D	23	·58	**86**	4	Jr	22	·11		5	F	20	·64	7	Mr	22○	·18
3	S	15○	·36	4	O	14	·89	5	N	13	·42	6	D	12	·95	**87**	1	Jr	11	·48		3	F	10	·01	4	Mr	11○	·54
6	S	4●○	·73	1	O	4	·26	2	N	2	·79	4	D	2	·32		5	D	31	·85	**88**	7	Jr	30	·38	1	F	28●	·91
5	S	22	·62	7	O	22	·15	1	N	20	·68	3	D	20	·22	**89**	4	Jr	18○	·75		6	F	17●	·28	7	Mr	18	·81
2	S	11	·99	4	O	11	·52	6	N	10	·05	7	D	9	·58	**90**	2	Jr	8○	·11		3	F	6	·64	5	Mr	8	·17
7	S	1	·36	1	S	30	·89	3	O	30	·42	4	N	28	·95		6	D	28○	·48	**91**	1	Jr	27	·01	2	F	25	·54
6	S	20	·26	7	O	19	·79	2	N	18	·32	3	D	17●	·85	**92**	5	Jr	16	·38		6	F	14	·91	1	Mr	15	·44
3	S	8	·62	5	O	8	·15	6	N	6○	·68	1	D	6	·21	**93**	2	Jr	4	·74		4	F	3	·28	5	Mr	4	·81
{ 7	Au	28	·99	4	O	27○	·05	5	N	25	·58			**Pausha Kshaya**			7	D	25	·11	**94**	1	Jr	23	·64	{ 3	F	22	·17
{ 2	S	27	·52																							{ 4	Mr	23	·70

TABLE X—

☉'s Anom col. 6 + 29·53059 + 59·06117 + 88·59176 + 118·12235

☾'s Anom col. 7 + 1·976 + 3·952 + 5·928 + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and Day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month	Ashada Day	Ashada Fraction	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
4295	1251	1116	24M	·9383	28·2962	25·780	**1194**	7	6	Ap	22○	·23	7	My	21	·76	2	Je	20	·30	3	Jl	19	·83	5	Au	18	·36
4296	1252	1117	25M	·1971	17·4045	21·938	**1195**	1	3	Ap	11●	·60	5	My	11	·13	6	Je	9	·66	1	Jl	9	·19	2	Au	7	·72
4297	1253	1118	24M	·4558	6·5128	18·095	**1196**	2	7	Mr	30	·97	2	Ap	29	·50	4	My	29	·03	5	Je	27	·56	1	Au	25○	·62
																					7	Jl	27	·09				
4298	1254	1119	24M	·7146	25·1517	16·228	**1197**	4	6	Ap	18	·87	1	My	18	·40	2	Je	16	·93	4	Jl	16	·46	5	Au	14○	·99
4299	1255	1120	24M	·9734	14·2600	12·385	**1198**	5	4	Ap	8	·23	5	My	7	·76	7	Je	6	·29	1	Jl	5	·82	3	Au	4○	·36
4300	1256	1121	25M	·2321	3·3683	8·543	**1199**	6	1	Mr	28	·60	3	Ap	27	·13	4	My	26	·66	7	Jl	24	·72	2	Au	23	·25
																	6	Je	25	·19								
4301	1257	1122	24M	·4909	22·0072	6·676	**1200**	7	7	Ap	15	·50	2	My	15	·03	3	Je	13○	·56	5	Jl	13	·09	6	Au	11	·62
4302	1258	1123	24M	·7496	11·1155	2·834	**1201**	2	4	Ap	4	·86	6	My	4	·40	7	Je	2○	·93	2	Jl	2	·46	3	Jl	31	·99
4303	1259	1124	25M	·0084	0·2238	26·545	**1202**	3	2	Mr	25	·23	5	My	23●	·29	6	Je	21	·82	1	Jl	21	·35	2	Au	19	·88
									3	Ap	23	·76																
4304	1260	1125	25M	·2671	18·8627	24·679	**1203**	4	1	Ap	13○	·13	2	My	12	·66	4	Je	11	·19	5	Jl	10	·72	7	Au	9	·25
4305	1261	1126	24M	·5259	7·9710	20·836	**1204**	5	5	Ap	1○	·50	7	My	1	·03	1	My	30	·56	3	Je	29	·09	4	Jl	28	·62
																									6	Au	27	·15
4306	1262	1127	24M	·7847	26·6099	18·969	**1205**	7	4	Ap	20	·39	5	My	19	·92	7	Je	18	·46	1	Jl	17	·99	3	Au	16	·52
4307	1263	1128	25M	·0434	15·7182	15·126	**1206**	1	1	Ap	9	·76	3	My	9	·29	4	Je	7	·82	6	Jl	7	·35	7	Au	5	·88
4308	1264	1129	25M	·3022	4·8265	11·284	**1207**	2	6	Mr	30	·13	7	Ap	28	·66	2	My	28	·19	5	Jl	26○	·25	6	Au	24●	·78
																	3	Je	26	·72								
4309	1265	1130	24M	·5609	23·4653	9·417	**1208**	3	5	Ap	17	·03	6	My	16	·56	1	Je	15	·09	2	Jl	14○	·62	4	Au	13	·15
4310	1266	1131	24M	·8197	12·5736	5·574	**1209**	5	2	Ap	6	·39	3	My	5	·92	5	Je	4	·45	6	Jl	3○	·98	1	Au	2	·52
4311	1267	1132	25M	·0784	1·6819	1·731	**1210**	6	6	Mr	26	·76	1	Ap	25	·29	4	Je	23	·35	5	Jl	22	·88	7	Au	21	·41
													2	My	24	·82												
4312	1268	1133	25M	·3372	20·3208	27·419	**1211**	7	5	Ap	14	·66	7	My	14○	·19	1	Je	12	·72	3	Jl	12	·25	4	Au	10	·78
4313	1269	1134	24M	·5959	9·4291	23·577	**1212**	1	3	Ap	3	·02	4	My	2○	·56	6	Je	1	·09	7	Je	30	·62	2	Jl	30	·15
4314	1270	1135	24M	·8547	28·0680	21·710	**1213**	3	1	Ap	21●	·92	3	My	21	·45	4	Je	19	·98	6	Jl	19	·51	1	Au	18	·04
4315	1271	1136	25M	·1135	17·1763	17·867	**1214**	4	6	Ap	11	·29	7	My	10	·82	2	Je	9	·35	3	Jl	8	·88	5	Au	7	·41
4316	1272	1137	25M	·3722	6·2846	14·024	**1215**	5	3	Mr	31	·66	5	Ap	30	·19	6	My	29	·72	1	Je	28	·25	4	Au	26○	·31
																					2	Jl	27	·78				
4317	1273	1138	24M	·6310	24·9235	12·158	**1216**	6	2	Ap	18	·55	4	My	18	·08	5	Je	16	·62	7	Jl	16	·15	1	Au	14○	·68
4318	1274	1139	24M	·8897	14·0318	8·315	**1217**	1	6	Ap	7	·92	1	My	7	·45	2	Je	5	·98	4	Jl	5	·51	6	Au	4●	·04
4319	1275	1140	25M	·1485	3·1401	4·472	**1218**	2	4	Mr	28	·29	5	Ap	26	·82	1	Je	24○	·88	3	Jl	24●	·41	4	Au	22	·94
													7	My	26	·35												
4320	1276	1141	25M	·4072	21·7790	2·605	**1219**	3	3	Ap	16	·19	4	My	15	·72	6	Je	14○	·25	7	Jl	13	·78	2	Au	12	·31
4321	1277	1142	24M	·6660	10·8873	26·317	**1220**	4	7	Ap	4	·55	2	My	4	·08	3	Je	2●	·61	5	Jl	2	·14	6	Jl	31	·68
4322	1278	1143	24M	·9248	29·5262	24·450	**1221**	6	4	Mr	24	·92	7	My	22●	·98	2	Je	21	·51	4	Jl	21	·04	5	Au	19	·57
									6	Ap	23	·45																
4323	1279	1144	25M	·1835	18·6345	20·608	**1222**	7	3	Ap	12○	·82	5	My	12	·35	6	Je	10	·88	1	Jl	10	·41	2	Au	8	·94
4324	1280	1145	25M	·4423	7·7428	16·765	**1223**	1	1	Ap	2○	·18	2	My	1	·72	4	My	31	·25	5	Je	29	·78	7	Jl	29	·31
																									1	Au	27	·84
4325	1281	1146	24M	·7010	26·3817	14·898	**1224**	2	7	Ap	20	·08	1	My	19	·61	3	Je	18	·14	4	Jl	17	·67	6	Au	16	·20
4326	1282	1147	24M	·9598	15·4900	11·055	**1225**	4	4	Ap	9	·45	5	My	8	·98	7	Je	7	·51	2	Jl	7	·04	3	Au	5○	·57
4327	1283	1148	25M	·2185	4·5982	7·213	**1226**	5	1	Mr	29	·82	3	Ap	28	·35	4	My	27	·88	7	Jl	25○	·94	2	Au	24	·47
																	6	Je	26	·41								
4328	1284	1149	25M	·4773	23·2371	5·346	**1227**	6	7	Ap	17	·71	2	My	17	·24	3	Je	15	·78	5	Jl	15●○	·31	6	Au	13	·84
4329	1285	1150	24M	·7361	12·3454	1·503	**1228**	7	5	Ap	6	·08	6	My	5	·61	1	Je	4	·14	2	Jl	3●	·67	4	Au	2	·20
4330	1286	1151	24M	·9948	1·4537	25·215	**1229**	2	2	Mr	26	·45	3	Ap	24	·98	7	Je	23	·04	1	Jl	22	·57	3	Au	21	·10
													5	My	24○	·51												
4331	1287	1152	25M	·2536	20·0926	23·348	**1230**	3	1	Ap	14	·35	2	My	13●○	·88	4	Je	12	·41	5	Jl	11	·94	7	Au	10	·47
4332	1288	1153	25M	·5123	9·2009	19·506	**1231**	4	5	Ap	3	·71	7	My	3	·24	1	Je	1	·77	3	Jl	1	·30	4	Jl	30	·84
4333	1289	1154	24M	·7711	27·8398	17·639	**1232**	5	4	Ap	21●	·61	6	My	21	·14	7	Je	19	·67	2	Jl	19	·20	3	Au	17	·73

Surya Siddhanta.

Asvina			Kartika			Margasira			Pausha			A.D.	Magha			A.D.	Phalguna			Chaitra		
+ 147·65293			+ 177·18353			+ 206·71411			+ 236·24470				+ 265·77529				+ 295·30588			{+324·83647 {+354·36705		
+ 9·880			+ 11·856			+ 13·832			+ 15·808				+ 17·784				+ 19·760			{+ 21·736 {+ 23·712		
Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	Week-day Month	Day	Fraction	·	Week-day Month	Day	Fraction		Week-day Month	Day	Fraction	Week-day Month	Day	Fraction
6 S	16	·89	1 O	16○	·42	2 N	14	·95	4 D	14	·48	**95**	6 Jr	13	·00		7 F	11	·54	2 Mr	13	·07
4 S	6	·25	5 O	5●	·78	7 N	4	·32	1 D	3	·85	**96**	3 Jr	2	·38		4 Jr	31	·91	6 Mr	1○	·44
3 S	24	·15	4 O	23	·68	6 N	22	·21	7 D	21	·74	**97**	2 Jr	20	·27		3 F	18○	·80	5 Mr	20	·34
7 S	13●	·52	2 O	13	·05	3 N	11	·58	5 D	11	·11	**98**	6 Jr	9	·64		1 F	8●○	·17	2 Mr	9	·70
4 S	2	·89	6 O	2	·42	7 O	31	·95	2 N	30	·48		4 D	30	·01	**99**	5 Jr	28●	·54	7 F	27	·07
3 S	21	·78	5 O	21	·31	6 N	19	·84	1 D	19ↄ	·38	**12**	2 Jr	17	·91	**00**	4 F	16	·44	5 Mr	16	·97
1 S	10	·15	2 O	9	·68	4 N	8	·21	5 D	7○	·74	**01**	7 Jr	6	·27		1 F	4	·80	3 Mr	6	·33
5 Au	30	·52	7 S	29	·05	1 O	28	·58	3 N	27●○	·11		4 D	26	·64	**02**	6 Jr	25	·17	7 F	23	·70
4 S	18	·42	5 O	17	·95	7 N	16●	·48	2 D	16	·01	**03**	3 Jr	14	·54		5 F	13	·07	6 Mr	14	·60
1 S	7	·78	3 O	7○	·31	4 N	5	·84	6 D	5	·37	**04**	7 Jr	3	·90		2 F	2	·44	3 Mr	2	·97
7 S	25ↄ	·68	2 O	25	·21	3 N	23	·74	5 D	23	·27	**05**	6 Jr	21	·80		1 F	20	·33	2 Mr	21●○	·86
5 S	15ↄ	·05	6 O	14	·58	1 N	13	·11	2 D	12	·64	**06**	4 Jr	11	·17		5 F	9	·70	7 Mr	11●	·23
2 S	4●	·41	3 O	3	·94	5 N	2	·48	7 D	2	·01		1 D	31	·54	**07**	3 Jr	30ↄ	·07	4 F	28●	·60
1 S	23	·31	2 O	22	·84	4 N	21	·37	5 D	20	·90	**08**	7 Jr	19ↄ	·43		1 F	17	96	3 Mr	18	·50
5 S	11	·68	6 O	11	·21	1 N	9	·74	3 D	9	·27	**09**	4 Jr	7○	·80		6 F	6	·33	7 Mr	7	·86
3 S	1	·05	4 S	30	·58	6 O	30	·11	7 N	28	·64		2 D	28	·17	**10**	3 Jr	26	·70	5 F	25	·23
1 S	19	·94	3 O	19	·47	5 N	18ↄ	·00	6 D	17	·54	**11**	1 Jr	16	·07		2 F	14	·60	4 Mr	16	·13
6 S	9	·31	7 O	8	·84	2 N	7○	·37	3 D	6●	·90	**12**	5 Jr	5	·43		6 F	3	·96	1 Mr	4	·49
{3 Au	28	·68	6 O	26ↄ	·74	1 N	25	·27	2 D	24	·80	**13**	4 Jr	23	·33		5 F	21	·86	7 Mı	23	·39
{5 S	27	·21																				
2 S	16	·58	4 O	16	·11	5 N	14	·64	7 D	14	·17	**14**	1 Jr	12	·70		3 F	11	·23	4 Mr	12○	·76
6 S	5ↄ	·94	1 O	5●	·47	3 N	4	·00	4 D	3	·53	**15**	6 Jr	2	·06		7 Jr	31	·60	2 Mr	2○	·13
5 S	24	·84	7 O	24	·37	1 N	22	·90	3 D	22	·43	**16**	4 Jr	20	·96		6 F	19●○	·49	1 Mr	20	·02
3 S	13	·21	4 O	12	·74	6 N	11	·27	7 D	10	·80	**17**	2 Jr	9	·33		3 F	7	·86	5 Mr	9	·39
7 S	2	·57	2 O	2	·10	3 O	31	·64	5 N	30	·17		6 D	29ↄ	·70	**18**	1 Jr	28●	·23	2 F	26	·76
6 S	21	·47	1 O	21	·00	2 N	19	·53	4 D	19ↄ	·06	**19**	5 Jr	17	·59		7 F	16	·12	1 Mr	17	·66
3 S	10	·84	5 O	10	·37	6 N	8	·90	1 D	8ↄ	·43	**20**	2 Jr	6	·96		4 F	5	·49	6 Mr	6	·02
1 Au	30	·21	2 S	28	·74	4 O	28	·27	5 N	26	·80		7 D	26	·33	**21**	1 Jr	24	·86	3 F	23	·39
7 S	18	·10	1 O	17○	·63	3 N	16	·16	4 D	15	·70	**22**	6 Jr	14	·23		7 F	12	·76	2 Mr	14	·29
4 S	7	·47	6 O	7○	·00	7 N	5	·53	2 D	5	·06	**23**	3 Jr	3	·59		5 F	2	·12	6 Mr	3	·65
3 S	26●○	·37	4 O	25	·90	6 N	24	·43	7 D	23	·96	**24**	2 Jr	22	·49		4 F	21	·02	5 Mr	21	·55
7 S	14	·74	2 O	14	·27	3 N	12	·80	5 D	12	·33	**25**	6 Jr	10	·86		1 F	9ↄ	·39	2 Mr	10	·92
5 S	4	·10	6 O	3	·63	1 N	2	·16	2 D	1	·69		4 D	31	·22	**26**	5 Jr	29○	·76	7 F	28●	·29
4 S	23	·00	5 O	22	·53	7 N	21	·06	1 D	20	·59	**27**	3 Jr	19●○	·12		4 F	17	·65	6 Mr	19	·18
1 S	12	·37	2 O	11	·90	4 N	10	·43	5 D	9	·96	**28**	7 Jr	8	·49		2 F	7	·02	3 Mr	7	·55
5 Au	31	·73	7 S	30	·26	1 O	29	·80	3 N	28ↄ	·33		4 D	27●	·86	**29**	6 Jr	26	·39	7 F	24	·92
4 S	19	·63	6 O	19	·16	7 N	17○	·69	2 D	17	·22	**30**	3 Jr	15	·75		5 F	14	·28	6 Mr	15	·81
2 S	9	·00	3 O	8	·53	5 N	7ↄ	·06	6 D	6	·59	**31**	1 Jr	5	·12		2 F	3	·65	4 Mr	5	·18
{6 Au	29	·37	2 O	27	·43	3 N	25	·96	5 D	25	·49	**32**	7 Jr	24	·02		1 F	22	·55	3 Mr	23○	·08
{7 S	27	·90																				
5 S	16ↄ	·26	6 O	15	·79	1 N	14	·32	2 D	13	·86	**33**	4 Jr	12	·39		5 F	10	·92	7 Mr	12○	·45

									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4334	1290	1155	25M	·0298	16·9481	13·796	**1233**	7	1	Ap	10	·98	3	My	10	·51	5	Je	9	·04	6	Jl	8	·57	1	Au	7	·10
4335	1291	1156	25M	·2886	6·0564	9·953	**1234**	1	6	Mr	31	·34	7	Ap	29	·88	2	My	29	·41	3	Je	27	·94	7	Au	26●○	·00
																					5	Jl	27	·47				
4336	1292	1157	25M	·5473	24·6953	8·087	**1235**	2	5	Ap	19	·24	6	My	18	·77	1	Je	17	·30	2	Jl	16	·83	4	Au	15●	·36
4337	1293	1158	24M	·8061	13·8036	4·244	**1236**	3	2	Ap	7	·61	4	My	7	·14	5	Je	5	·67	7	Jl	5○	·20	1	Au	3●	·73
4338	1294	1159	25M	·0649	2·9119	0·401	**1237**	5	6	Mr	27	·98	1	Ap	26	·51	4	Je	24○	·57	6	Jl	24	·10	7	Au	22	·63
													3	My	26	·04												
4339	1295	1160	25M	·3236	21·5508	26·089	**1238**	6	5	Ap	15	·87	7	My	15	·40	1	Je	13○	·94	3	Jl	13	·47	5	Au	12	·00
4340	1296	1161	25M	·5824	10·6591	22·246	**1239**	7	3	Ap	5	·24	4	My	4	·77	6	Je	3●	·30	7	Jl	2	·83	2	Au	1	·36
4341	1297	1162	24M	·8411	29·2980	20·379	**1240**	1	7	Mr	24	·61	3	My	22●	·67	5	Je	21	·20	6	Jl	20	·73	1	Au	19	·26
									2	Ap	23○	·14																
4342	1298	1163	25M	·0999	18·4063	16·537	**1241**	3	6	Ap	12○	·51	1	My	12	·04	2	Je	10	·57	4	Jl	10	·10	5	Au	8	·63
4343	1299	1164	25M	·3586	7·5146	12·694	**1242**	4	3	Ap	1	·87	5	My	1	·40	6	My	30	·93	1	Je	29	·46	3	Jl	29	·00
																									4	Au	27	·53
4344	1300	1165	25M	·6174	26·1534	10·827	**1243**	5	2	Ap	20	·77	4	My	20	·30	5	Je	18	·83	7	Jl	18	·36	1	Au	16○	·89
4345	1301	1166	24M	·8762	15·2617	6·984	**1244**	6	7	Ap	9	·14	1	My	8	·67	3	Je	7	·20	4	Jl	6	·73	6	Au	5○	·26
4346	1302	1167	25M	·1349	4·3700	3·143	**1245**	1	4	Mr	29	·50	6	Ap	28	·03	7	My	27	·57	3	Jl	25●○	·63	5	Au	24	·16
																	2	Je	26	·10								
4347	1303	1168	25M	·3937	23·0089	1·275	**1246**	2	3	Ap	17	·40	4	My	16	·93	6	Je	15	·46	7	Jl	14	·99	2	Au	13	·52
4348	1304	1169	25M	·6524	12·1172	24·987	**1247**	3	7	Ap	6	·77	2	My	6	·30	3	Je	4○	·83	5	Jl	4●	·36	6	Au	2	·89
4349	1305	1170	24M	·9112	1·2255	21·144	**1248**	4	5	Mr	26	·14	6	Ap	24	·67	2	Je	22	·73	4	Jl	22	·26	5	Au	20	·79
													1	My	24●○	·20												
4350	1306	1171	25M	·1699	19·8644	19·277	**1249**	6	4	Ap	14	·03	5	My	13●	·56	7	Je	12	·09	1	Jl	11	·63	3	Au	10	·16
4351	1307	1172	25M	·4287	8·9727	15·434	**1250**	7	1	Ap	3○	·40	2	My	2●	·93	4	Je	1	·46	5	Je	30	·99	7	Jl	30	·52
4352	1308	1173	25M	·6875	27·6117	13·568	**1251**	1	7	Ap	22	·30	1	My	21	·83	3	Je	20	·36	4	Jl	19	·89	6	Au	18	·42
4353	1309	1174	24M	·9462	16·7199	9·725	**1252**	2	4	Ap	10	·67	6	My	10	·20	7	Je	8	·73	2	Jl	8	·26	3	Au	6	·79
4354	1310	1175	25M	·2050	5·8282	5·883	**1253**	4	2	Mr	31	·03	3	Ap	29	·56	5	My	29	·09	6	Je	27	·62	2	Au	25	·69
																					1	Jl	27	·15				
4355	1311	1176	25M	·4637	24·4671	4·015	**1254**	5	7	Ap	18	·93	2	My	18	·46	3	Je	16	·99	5	Jl	16○	·52	6	Au	14	·05
4356	1312	1177	25M	·7225	13·5754	0·173	**1255**	6	5	Ap	8	·30	6	My	7	·83	1	Je	6	·36	2	Jl	5○	·89	4	Au	4	·42
4357	1313	1178	24M	·9812	2·6837	23·885	**1256**	7	2	Mr	27	·66	4	Ap	26	·19	7	Je	24●○	·26	1	Jl	23	·79	3	Au	22	·32
													5	My	25	·73												
4358	1314	1179	25M	·2400	21·3226	22·018	**1257**	2	1	Ap	15	·56	3	My	15	·09	4	Je	13	·62	6	Jl	13	·15	7	Au	11	·68
4359	1315	1180	25M	·4987	10·4309	18·175	**1258**	3	5	Ap	4	·93	7	My	4○	·46	1	Je	2●	·99	3	Jl	2	·52	5	Au	1	·05
4360	1316	1181	25M	·7575	29·0698	16·308	**1259**	4	4	Ap	23○	·83	6	My	23	·36	7	Je	21	·89	2	Jl	21	·42	3	Au	19	·95
4361	1317	1182	25M	·0163	18·1781	12·466	**1260**	5	2	Ap	12●	·19	3	My	11	·72	5	Je	10	·25	6	Jl	9	·79	1	Au	8	·32
4362	1318	1183	25M	·2750	7·2864	8·623	**1261**	7	6	Ap	1●	·56	1	My	1	·09	2	My	30	·62	4	Je	29	·15	5	Jl	28	·68
																									7	Au	27○	·21
4363	1319	1184	25M	·5338	25·9252	6·756	**1262**	1	5	Ap	20	·46	6	My	19	·99	1	Je	18	·52	3	Jl	18	·05	4	Au	16●○	·58
4364	1320	1185	25M	·7925	15·0335	2·913	**1263**	2	2	Ap	9	·83	4	My	9	·36	5	Je	7	·89	7	Jl	7	·42	1	Au	5○	·95
4365	1321	1186	25M	·0513	4·1418	26·625	**1264**	3	7	Mr	29	·19	1	Ap	27	·72	3	My	27	·25	6	Jl	25	·31	7	Au	23	·85
																	4	Je	25	·78								
4366	1322	1187	25M	·3100	22·7807	24·758	**1265**	5	6	Ap	17	·09	7	My	16	·62	2	Je	15○	·15	3	Jl	14	·68	5	Au	13	·21
4367	1323	1188	25M	·5688	11·8890	20·916	**1266**	6	3	Ap	6	·46	4	My	5	·99	6	Je	4○	·52	1	Jl	4	·05	2	Au	2	·58
4368	1324	1189	25M	·8276	0·9973	17·073	**1267**	7	7	Mr	26	·82	2	Ap	25	·35	5	Je	23	·42	6	Jl	22	·95	1	Au	21	·48
													3	My	24●○	·89												
4369	1325	1190	25M	·0863	19·6362	15·206	**1268**	1	6	Ap	13○	·72	1	My	13	·25	2	Je	11	·78	4	Jl	11	·31	5	Au	9	·84
4370	1326	1191	25M	·3451	8·7445	11·363	**1269**	3	4	Ap	3○	·08	5	My	2	·62	7	Je	1	·15	1	Je	30	·68	3	Jl	30	·21
4371	1327	1192	25M	·6038	27·3834	9·497	**1270**	4	2	Ap	21	·99	4	My	21	·52	6	Je	20	·05	7	Jl	19	·58	2	Au	18	·11
4372	1328	1193	25M	·8626	16·4917	5·654	**1271**	5	7	Ap	11	·35	1	My	10	·88	3	Je	9	·41	4	Jl	8	·95	6	Au	7	·48

urya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{ +324·83647 { +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 { + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	5○	·63	4	O	5●	·16	5	N	3	·69	7	D	3	·22	**34**	1	Jr	1	·75		3	Jr	31	·28	4	Mr	1○	·81
1	S	24	·53	3	O	24	·06	4	N	22	·59	6	D	22	·12	**35**	7	Jr	20	·65		2	F	19●	·18	3	Mr	20	·71
5	S	13	·90	7	O	13	·43	1	N	11	·96	3	D	11	·49	**36**	5	Jr	10○	·02		6	F	8	·55	1	Mr	9	·08
3	S	2	·26	4	O	1	·79	6	O	31	·32	7	N	29	·85		2	D	29○	·38	**37**	3	Jr	27	·92	5	F	26	·45
2	S	21	·16	3	O	20	·69	5	N	19	·22	6	D	18●○	·75	**38**	1	Jr	17	·28		2	F	15	·81	4	Mr	17	·34
6	S	10	·53	1	O	10	·06	2	N	8	·59	4	D	8●	·12	**39**	5	Jr	6	·65		7	F	5	·18	1	Mr	6	·71
3	Au	30	·89	5	S	29	·42	6	O	28○	·95	1	N	27●	·49		3	D	27	·02	**40**	4	Jr	25	·55	6	F	24	·08
2	S	17	·79	4	O	17○	·32	5	N	15	·85	7	D	15	·38	**41**	1	Jr	13	·91		3	F	12	·44	4	Mr	13	·97
7	S	7	·16	1	O	6●○	·69	3	O	5	·22	4	D	4	·75	**42**	6	Jr	3	·28		7	F	1	·81	2	Mr	3	·34
6	S	26●	·06	7	O	25	·59	2	N	24	·12	3	D	23	·65	**43**	5	Jr	22	·18		6	F	20○	·71	1	Mr	22●	·24
3	S	15	·42	4	O	14	·95	6	N	13	·48	1	D	13	·01	**44**	2	Jr	11	·55		4	F	10○	·08	5	Mr	10	·61
7	S	3	·79	2	O	3	·32	3	N	1	·85	5	D	1	·38		6	D	30	·91	**45**	1	Jr	29○	·44	2	F	27	·97
6	S	22	69	1	O	22	·22	2	N	20	·75	4	D	20	·28	**46**	5	Jr	18●	·81		7	F	17	·34	1	Mr	18	·87
4	S	12	·05	5	O	11	·59	7	N	10	·12	1	D	9○	·65	**47**	3	Jr	8	·18		4	F	6	·71	6	Mr	8	·24
1	S	1	·42	2	S	30	·95	4	O	30	·48	6	N	29○	·01		7	D	28	·54	**48**	2	Jr	27	·07	3	F	25	·61
7	S	19	·32	1	O	18	·85	3	N	17○	·38	4	D	16	·91	**49**	6	Jr	15	·44		7	F	13	·97	2	Mr	15	·50
4	S	8	·69	6	O	8	·22	7	N	6●	·75	2	D	6	·28	**50**	3	Jr	4	·81		5	F	3	·34	6	Mr	4	·87
{ 2	Au	29	·05	5	O	27	·11	6	N	25	·65	1	D	25	·18	**51**	2	Jr	23	·71		4	F	22	·24	5	Mr	23○	·77
{ 3	S	27○	·58																										
7	S	16○	·95	2	O	16	·48	4	N	15	·01	5	D	14	·54	**52**	7	Jr	13	·07		1	F	11	·60	3	Mr	12○	·13
5	S	5○	·32	6	O	4	·85	1	N	3	·38	2	D	2	·91	**53**	4	Jr	1	·44		6	Jr	31	·97	7	Mr	1●	·50
4	S	24	·22	5	O	23	·75	7	N	22	·28	1	D	21	·81	**54**	3	Jr	20○	·34		4	F	18	·87	6	Mr	20	·40
1	S	13	·58	3	O	13	·11	4	N	11	·64	6	D	11	·17	**55**	7	Jr	9●○	·71		2	F	8	·24	3	Mr	9	·77
5	S	2	·95	7	O	2	·48	2	N	1	·01	3	N	30	·54		5	D	30○	·07	**56**	6	Jr	28	·60	1	F	27	·13
4	S	20	·85	6	O	20	·38	7	N	18	·91	2	D	18	·44	**57**	3	Jr	16	·97		5	F	15	·50	7	Mr	17	·03
2	S	10	·21	3	O	9	·75	5	N	8○	·28	6	D	7	·81	**58**	1	Jr	6	·34		2	F	4	·87	4	Mr	6	·40
6	Au	30	·58	{ 1	S	29	·11	4	N	27	·17	**Pausha Kshaya.**					5	D	26	·70	**59**	7	Jr	25	·23	{ 1	F	23	·77
				{ 2	O	28○	·64																			{ 3	Mr	25	·30
5	S	18	·48	7	O	18○	·01	1	N	16	·54	3	D	16	·07	**60**	4	Jr	14	·60		6	F	13	·13	7	Mr	13	·66
2	S	6	·85	4	O	6●	·38	5	N	4	·91	7	D	4	·44	**61**	2	Jr	3	·97		3	F	1	·50	5	Mr	3○	·03
1	S	25●	·74	3	O	25	·27	4	N	23	·81	6	D	23	·34	**62**	7	Jr	21	·87		2	F	20○	·40	3	Mr	21	·93
6	S	15	·11	7	O	14	·64	2	N	13	·17	3	D	12	·70	**63**	5	Jr	11	·23		6	F	9○	·76	1	Mr	11	·29
3	S	4	·48	5	O	4	·01	6	N	2	·54	1	D	2	·07		2	D	31	·60	**64**	4	Jr	30	·13	5	F	28	·66
2	S	22	·38	3	O	21	·91	5	N	20	·44	6	D	19○	·97	**65**	1	Jr	18●	·50		3	F	17	·03	4	Mr	18	·56
6	S	11	·74	1	O	11	·27	2	N	9	·80	4	D	9○	·33	**66**	5	Jr	7●	·87		7	F	6	·40	1	Mr	7	·93
4	S	1	·11	5	S	30	·64	7	O	30	·17	1	N	28○	·70		3	D	28	·23	**67**	4	Jr	26	·76	6	F	25	·29
3	S	20	·01	4	O	19	·54	6	N	18	·07	7	D	17	·60	**68**	2	Jr	16	·13		3	F	14	·66	5	Mr	15	·19
7	S	8	·37	1	O	7○	·91	3	N	6●	·44	4	D	5	·97	**69**	6	Jr	4	·50		1	F	3	·03	2	Mr	4	·56
{ 4	Au	28	·74	7	O	26	·80	2	N	25	·33	3	D	24	·86	**70**	5	Jr	23	·39		6	F	21	·93	1	Mr	23●○	·46
{ 6	S	27○	·27																										
3	S	16○	·64	5	O	16	·17	6	N	14	·70	1	D	14	·23	**71**	2	Jr	12	·76		4	F	11	·29	5	Mr	12	·82
1	S	6●	·01	2	O	5	·54	4	N	4	·07	5	D	3	·60	**72**	7	Jr	2	·13		1	Jr	31○	·66	3	Mr	1●	·19

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year.		First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	☉'s Anom col. 6 ☾'s Anom col. 7 Vaisakha				+ 29·53059 + 1·976 Jyeshta				+ 59·06117 + 3·952 Ashada				+ 88·59176 + 5·928 Sravana				+ 118·12235 + 7·904 Bhadrapada			
			Month and day A.D.	Fraction of day.					Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-Day	Month	Day	Fraction
4373	1329	1194	25M	·1213	5·6000	1·811	**1272**	6	4	Mr	30	·72	6	Ap	29	·25	7	My	28	·78	3	Jl	26Ↄ	·84	5	Au	25●	·37
																	2	Je	27	·31								
4374	1330	1195	25M	·3801	24·2389	27·499	**1273**	1	3	Ap	18	·62	5	My	18	·15	6	Je	16	·68	1	Jl	16Ↄ	·21	2	Au	14	·74
4375	1331	1196	25M	·6389	13·3472	23·656	**1274**	2	7	Ap	7	·99	2	My	7	·52	4	Je	6	·05	5	Jl	5●○	·58	7	Au	4	·11
4376	1332	1197	25M	·8976	2·4555	19·814	**1275**	3	5	Mr	28	·35	6	Ap	26	·88	2	Je	24●	·94	4	Jl	24	·47	6	Au	23	·01
													1	My	26	·41												
4377	1333	1198	25M	·1564	21·0944	17·947	**1276**	4	4	Ap	15	·25	5	My	14○	·78	7	Je	13	·31	1	Jl	12	·84	3	Au	11	·37
4378	1334	1199	25M	·4151	10·2027	14·104	**1277**	6	1	Ap	4	·62	3	My	4○	·15	4	Je	2	·68	6	Jl	2	·21	7	Jl	31	·74
4379	1335	1200	25M	·6739	28·8416	12·237	**1278**	7	7	Ap	23	·51	2	My	23	·05	3	Je	21	·58	5	Jl	21	·11	6	Au	19	·64
4380	1336	1201	25M	·9336	17·9498	8·395	**1279**	1	4	Ap	12	·88	6	My	12	·41	7	Je	10	·94	2	Jl	10	·47	4	Au	9	·00
4381	1337	1202	25M	·1914	7·0581	4·552	**1280**	2	2	Ap	1●	·25	3	Ap	30	·78	5	My	30	·31	6	Je	28	·84	2	Au	26Ↄ	·90
																					1	Jl	28	·37				
4382	1338	1203	25M	·4501	25·6970	2·685	**1281**	4	1	Ap	20	·15	2	My	19	·68	4	Je	18	·21	5	Jl	17	·74	7	Au	16Ↄ	·27
4383	1339	1204	25M	·7089	14·8053	26·397	**1282**	5	5	Ap	9	·51	7	My	9	·04	1	Je	7	·57	3	Jl	7	·11	4	Au	5●	·64
4384	1340	1205	25M	·9677	3·9136	22·554	**1283**	6	2	Mr	29	·88	4	Ap	28	·41	5	My	27	·94	2	Jl	26	·00	3	Au	24	·53
																	7	Je	26Ↄ	·47								
4385	1341	1206	25M	·2264	22·5525	20·688	**1284**	7	1	Ap	16	·78	3	My	16	·31	4	Je	14●○	·84	6	Jl	14	·37	7	Au	12	·90
4386	1342	1207	25M	·4852	11·6608	16·845	**1285**	2	6	Ap	6	·15	7	My	5	·68	2	Je	4○	·21	3	Jl	3	·74	5	Au	2	·27
4387	1343	1208	25M	·7439	0·7691	13·002	**1286**	3	3	Mr	26	·51	6	My	24	·57	1	Je	23	·10	2	Jl	22	·63	4	Au	21	·17
									5	Ap	25Ↄ	·04																
4388	1344	1209	26M	·0027	19·4080	11·135	**1287**	4	2	Ap	14○	·41	3	My	13	·94	5	Je	12	·47	7	Jl	12	·00	1	Au	10	·53
4389	1345	1210	25M	·2614	8·5163	7·292	**1288**	5	6	Ap	2Ↄ	·78	1	My	2	·31	2	My	31	·84	4	Je	30	·37	5	Jl	29	·90
																									7	Au	28	·43
4390	1346	1211	25M	·5202	27·1552	5·426	**1289**	7	5	Ap	21	·67	7	My	21	·21	1	Je	19	·74	3	Jl	19	·27	4	Au	17	·80
4391	1347	1212	25M	·7790	16·2635	1·583	**1290**	1	3	Ap	11	·04	4	My	10	·57	6	Je	9	·10	7	Jl	8	·63	2	Au	7Ↄ	·16
4392	1348	1213	26M	·0377	5·3718	25·295	**1291**	2	7	Mr	31	·41	2	Ap	30	·94	3	My	29	·47	6	Jl	27Ↄ	·53	1	Au	26●	·06
																	5	Je	28	·00								
4393	1349	1214	25M	·2965	24·0107	23·428	**1292**	3	6	Ap	18	·31	7	My	17	·84	2	Je	16	·37	3	Jl	15Ↄ	·90	5	Au	14	·43
4394	1350	1215	25M	·5552	13·1190	19·585	**1293**	5	3	Ap	7	·67	5	My	7	·20	6	Je	5	·73	1	Jl	5●	·27	2	Au	3	·80
4395	1351	1216	25M	·8140	2·2273	15·744	**1294**	6	1	Mr	28	·04	2	Ap	26	·57	5	Je	24●	·63	7	Jl	24	·16	1	Au	22	·69
													4	My	26Ↄ	·10												
4396	1352	1217	26M	·0727	20·8662	13·876	**1295**	7	6	Ap	15	·94	1	My	15○	·47	3	Je	14	·00	4	Jl	13	·53	6	Au	12	·06
4397	1353	1218	25M	·3315	9·9745	10·033	**1296**	1	4	Ap	4	·31	5	My	3○	·84	7	Je	2	·37	1	Jl	1	·90	3	Jl	31	·43
4398	1354	1219	25M	·5902	28·6133	8·166	**1297**	3	3	Ap	23●	·20	4	My	22	·73	6	Je	21	·26	7	Jl	20	·79	2	Au	19	·33
4399	1355	1220	25M	·8490	17·7216	4·324	**1298**	4	7	Ap	12	·57	2	My	12	·10	3	Je	10	·63	5	Jl	10	·16	6	Au	8	·69
4400	1356	1221	26M	·1078	6·8299	0·481	**1299**	5	4	Ap	1	·94	6	My	1	·47	1	My	31	·00	2	Je	29	·53	5	Au	27●○	·59
																					4	Jl	29	·06				
4401	1357	1222	25M	·3665	25·4688	26·169	**1300**	6	3	Ap	19	·83	5	My	19	·37	6	Je	17	·90	1	Jl	17	·43	2	Au	15●	·96
4402	1358	1223	25M	·6253	14·5771	22·326	**1301**	1	1	Ap	9	·20	2	My	8	·73	4	Je	7	·26	5	Jl	6○	·79	7	Au	5●	·32
4403	1359	1224	25M	·8840	3·6854	18·483	**1302**	2	5	Mr	29	·57	7	Ap	28	·10	1	My	27	·63	4	Jl	25	·69	6	Au	24	·22
																	3	Je	26●○	·16								
4404	1360	1225	26M	·1428	22·3243	16·616	**1303**	3	4	Ap	17	·47	6	My	17	·00	7	Je	15●○	·53	2	Jl	15	·06	3	Au	13	·59
4405	1361	1226	25M	·4015	11·4326	12·774	**1304**	4	1	Ap	5	·83	3	My	5○	·36	4	Je	3●	·90	6	Jl	3	·43	7	Au	1	·96
4406	1362	1227	25M	·6603	0·5409	8·931	**1305**	6	6	Mr	26	·20	2	My	24	·26	3	Je	22	·79	5	Jl	23	·32	6	Au	20	·85
									7	Ap	24○	·73																
4407	1363	1228	25M	·9191	19·1798	7·064	**1306**	7	5	Ap	14○	·10	6	My	13	·63	1	Je	12	·16	2	Jl	11	·69	4	Au	10	·22
4408	1364	1229	26M	·1778	8·2881	3·221	**1307**	1	2	Ap	3●	·47	4	My	3	·00	5	Je	1	·53	7	Jl	1	·06	1	Jl	30	·59
																									3	Au	29	·12
4409	1365	1230	25M	·4366	26·9270	1·355	**1308**	2	1	Ap	21	·36	2	My	20	·89	4	Je	19	·43	5	Jl	18	·96	7	Au	17Ↄ	49
4410	1366	1231	25M	·6953	16·0353	25·067	**1309**	4	5	Ap	10	·73	7	My	10	·26	1	Je	8	·79	3	Jl	8	·32	4	Au	6Ↄ	·85
4411	1367	1232	25M	·9541	5·1436	21·224	**1310**	5	3	Mr	31	·10	4	Ap	29	·63	6	My	29	·16	2	Jl	27●○	·22	3	Au	25	·75
																	7	Je	27	·69								

urya Siddhanta.

+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 + 23·712			
Asvina				**Kartika**				**Margasira**				**Pausha**				**A.D.**	**Magha**				**A.D.**	**Phalguna**				**Chaitra**			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	23	·90	1	O	23	·43	2	N	21	·97	4	D	21	·50	**73**	6	Jr	20ↄ	·03		7	F	18	·56	2	Mr	20	·09
4	S	13	·27	5	O	12	·80	7	N	11	·33	1	D	10	·86	**74**	3	Jr	9ↄ	·39		4	F	7	·92	6	Mr	9	·45
1	S	2	·64	3	O	2	·17	4	O	31	·70	6	N	30	·23		7	D	29	·76	**75**	2	Jr	28	·29	3	F	26	·82
7	S	21	·54	2	O	21	·07	3	N	19ↄ	·60	5	D	19	·13	**76**	6	Jr	17	·66		1	F	16	·19	2	Mr	16	·72
4	S	9	·90	6	O	9	·43	7	N	7ↄ	·96	2	D	7	·49	**77**	4	Jr	6	·03		5	F	4	·56	7	Mr	6	·09
2	Au	30	·27	{3	S	28	·80	6	N	26	·86	**Pausha Kshaya.**					1	D	26	39	**78**	{2	Jr	24	·92	5	Mr	24	·98
				{5	O	28●ↄ	·33															{4	F	23	·45				
1	S	18	·17	2	O	17	·70	4	N	16	·23	5	D	15	·76	**79**	7	Jr	14	·29		1	F	12	·82	3	Mr	14ↄ	·35
5	S	7○	·53	6	O	7	·07	1	N	5	·60	3	D	5	·13	**80**	4	Jr	3	·66		6	F	2	·19	7	Mr	2ↄ	·72
4	S	25	·43	5	O	24	·96	7	N	23	·49	2	D	23	·02	**81**	3	Jr	21	·55		5	F	20●ↄ	·09	6	Mr	21	·62
1	S	14	·80	3	O	14	·33	4	N	12	·86	3	D	12	·39	**82**	7	Jr	10	·92		2	F	9●	·45	3	Mr	10	·98
6	S	4	·17	7	O	3	·70	2	N	2	·23	[illegible]	D	1	·76		5	D	31○	·29	**83**	6	Jr	29●	·82	1	F	28	·35
5	S	23	·06	6	O	22	·59	1	N	21	·13	2	D	20ↄ	·66	**84**	4	Jr	19	·19		5	F	17	·72	7	Mr	18	·25
2	S	11	·43	3	O	10	·96	5	N	9	·49	7	D	9ↄ	·02	**85**	1	Jr	7	·55		3	F	6	·08	4	Mr	7	·61
6	Au	31	·80	1	S	30	·33	2	O	29	·86	4	N	28●	·39		5	D	27	·92	**86**	7	Jr	26	·45	1	F	24	·98
5	S	19	·70	7	O	19ↄ	·23	1	N	17	·76	3	D	17	·29	**87**	4	Jr	15	·82		6	F	14	·35	7	Mr	15	·88
3	S	9	·06	5	O	8ↄ	·59	6	N	7●	·12	7	D	6	·65	**88**	2	Jr	5	·19		3	F	3	·72	5	Mr	4	·25
1	S	26ↄ	·96	3	O	26	·49	5	N	25	·02	6	D	24	·55	**89**	1	Jr	23	·08		2	F	21	·61	4	Mr	23●	·14
6	S	16●	·33	7	O	15	·86	2	N	14	·39	3	D	13	·92	**90**	5	Jr	12	·45		6	F	10ↄ	·98	1	M	12	·51
3	S	5●	·69	5	O	5	·23	6	N	3	·76	1	D	3	·29	**91**	2	Jr	1	·82		4	Jr	31○	·35	5	Mr	1	·88
2	S	24	·59	4	O	24	·12	5	N	22	·65	7	D	22	·18	**92**	1	Jr	20●ↄ	·71		3	F	19	·25	4	Mr	19	·78
6	S	12	·96	1	O	12	·49	3	N	11	·02	4	D	10	·55	**93**	6	Jr	9●	·08		7	F	7	·61	2	Mr	9	·14
4	S	2	·33	5	O	1	·86	7	O	31	·39	1	N	29ↄ	·92		3	D	29●	·45	**94**	4	Jr	27	·98	6	F	26	·51
3	S	21	·22	4	O	20	·75	6	N	19ↄ	·29	7	D	18	·82	**95**	2	Jr	17	·35		3	F	15	·88	5	Mr	17	·41
7	S	10	·59	2	O	10	·12	3	N	8ↄ	·65	5	D	8	·18	**96**	6	Jr	6	·71		1	F	5	·24	2	Mr	5	·77
4	Au	29	·96	6	S	28	·49	{1	O	28●	·02	**Pausha Kshaya.**					4	D	26	·08	**97**	{5	Jr	24	·61	1	M.	24○	·67
								{2	N	26	·55											{7	F	23	·14				
3	S	17○	·86	5	O	17	·39	6	N	15	·92	1	D	15	·45	**98**	2	Jr	13	·98		4	F	12	·51	6	Mr	14○	·04
1	S	7○	·22	2	O	6	·75	4	N	5	·28	5	D	5	·81	**99**	7	Jr	3	·35		1	F	1	·88	3	Mr	3○	·41
7	S	26	·12	1	O	25	·65	3	N	24	·18	4	D	23	·71	**13**	6	Jr	22	·24	**00**	7	F	20●	·77	2	Mr	21	·30
4	S	14	·49	6	O	14	·02	7	N	12	·55	2	D	12	·08	**01**	3	Jr	10○	·61		5	F	9	·14	6	Mr	10	·67
1	S	3	·85	3	O	3	·39	4	N	1	·92	6	D	1	·45		7	D	30○	·98	**02**	2	Jr	29	·51	4	F	28	·04
7	S	22	·75	2	O	22	·28	3	N	20	·81	5	D	20ↄ	·34	**03**	6	Jr	18	·87		1	F	17	·41	2	Mr	18	·94
5	S	12	·12	6	O	11	·65	1	N	10	·18	2	D	9●	·71	**04**	4	Jr	8	·24		5	F	6	·77	7	Mr	7	·30
2	Au	31	·49	4	S	30	·02	5	O	29ↄ	·55	7	N	28●	·08		1	D	27	·61	**05**	3	Jr	26	·14	4	F	24	·67
1	S	19	·38	2	O	18ↄ	·92	4	N	17	·45	5	D	16	·98	**06**	7	Jr	15	·51		2	F	14	·04	3	Mr	15	·57
5	S	8	·75	7	O	8ↄ	·28	1	N	6	·81	3	D	6	·34	**07**	4	Jr	4	·87		6	F	3	·40	7	Mr	4	·94
4	S	27	·65	6	O	27	·18	7	N	25	·71	2	D	25	·24	**08**	3	Jr	23	·77		5	F	22ↄ	·30	6	Mr	22	·83
2	S	16	·02	3	O	15	·55	5	N	14	·08	6	D	13	·61	**09**	1	Jr	12	·14		2	F	10ↄ	·67	4	Mr	12	·20
6	S	5	·38	7	O	4	·91	2	N	3	·44	3	D	2	·98	**10**	5	Jr	1	·51		7	Jr	31ↄ	·04	1	Mr	1	·57
5	S	24	·28	6	O	23	·81	1	N	22	·34	2	D	21	·87	**11**	4	Jr	20	·40		5	F	18	·93	7	Mr	20	·47

TABLE X–

									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4412	1368	1233	26M	·2128	23·7825	19·357	**1311**	6	2	Ap	19	·00	3	My	18	·53	5	Je	17	·06	6	Jl	16	·59	1	Au	15	·12
4413	1369	1234	25M	·4716	12·8908	15·514	**1312**	7	6	Ap	7	·36	7	My	6	·89	2	Je	5○	·42	3	Jl	4●	·96	5	Au	3	·49
4414	1370	1235	25M	·7304	1·9991	11·672	**1313**	2	3	Mr	27	·73	5	Ap	26	·26	1	Je	24	·32	2	Jl	23	·85	4	Au	22	·38
													6	My	25○	·79												
4415	1371	1236	25M	·9892	20·6380	9·805	**1314**	3	2	Ap	15	·63	4	My	15●○	·16	5	Je	13	·69	7	Jl	13	·22	1	Au	11	·75
4416	1372	1237	26M	·2479	9·7463	5·962	**1315**	4	7	Ap	5○	·00	1	My	4●	·53	3	Je	3	·06	4	Jl	2	·59	6	Au	1	·12
4417	1373	1238	25M	·5066	28·3851	4·095	**1316**	5	5	Ap	22	·89	7	My	22	·42	1	Je	20	·95	3	Jl	20	·48	5	Au	19	·02
4418	1374	1239	25M	·7654	17·4934	0·254	**1317**	7	3	Ap	12	·26	4	My	11	·79	6	Je	10	·32	7	Jl	9	·85	2	Au	8	·38
4419	1375	1240	26M	·0241	6·6017	23·964	**1318**	1	7	Ap	1	·63	2	My	1	·16	3	My	30	·69	5	Je	29	·22	1	Au	27	·28
																					6	Jl	28	·75				
4420	1376	1241	26M	·2829	25·2406	22·098	**1319**	2	6	Ap	20	·53	1	My	20	·06	2	Je	18	·59	4	Jl	18○	·12	5	Au	16●	·65
4421	1377	1242	25M	·5416	14·3489	18·255	**1320**	3	3	Ap	8	·89	5	My	8	·42	6	Je	6	·95	1	Jl	6○	·48	3	Au	5	·01
4422	1378	1243	25M	·8004	3·4572	14·412	**1321**	5	1	Mr	29	·26	2	Ap	27	·79	4	My	27	·32	7	Jl	25	·38	1	Au	23	·91
																	5	Je	25●○	·85								
4423	1379	1244	26M	·0591	22·0961	12·545	**1322**	6	7	Ap	17	·16	1	My	16	·69	3	Je	15	·22	4	Jl	14	·75	6	Au	13	·28
4424	1380	1245	26M	·3179	11·2044	8·702	**1323**	7	4	Ap	6	·52	6	My	6○	·06	7	Je	4	·59	2	Jl	4	·12	3	Au	2	·65
4425	1381	1246	25M	·5767	0·3127	4·860	**1324**	1	1	Mr	25	·89	4	My	23	·95	6	Je	22	·48	1	Jl	22	·01	2	Au	20	·54
									3	Ap	24●○	·42																
4426	1382	1247	25M	·8354	18·9516	2·994	**1325**	3	7	Ap	13	·79	2	My	13	·32	3	Je	11	·85	5	Jl	11	·38	6	Au	9	·91
4427	1383	1248	26M	·0942	8·0599	26·705	**1326**	4	5	Ap	3●	·16	6	My	2	·69	1	Je	1	·22	2	Je	30	·75	4	Jl	30	·28
																									5	Au	28○	·81
4428	1384	1249	26M	·3528	26·6988	24·838	**1327**	5	4	Ap	22	·05	5	My	21	·59	7	Je	20	·12	1	Jl	19	·65	3	Au	18○	·18
4429	1385	1250	25M	·6117	15·8071	20·995	**1328**	6	1	Ap	10	·42	2	My	9	·95	4	Je	8	·48	6	Jl	8	·01	7	Au	6●○	·54
4430	1386	1251	25M	·8705	4·9154	17·153	**1329**	1	5	Mr	30	·79	7	Ap	29	·32	1	My	28	·85	4	Jl	26●	·91	6	Au	25	·44
																	3	Je	27	·38								
4431	1387	1252	26M	·1292	23·5543	15·286	**1330**	2	4	Ap	18	·69	6	My	18	·22	7	Je	16○	·75	2	Jl	16	·28	3	Au	14	·81
4432	1388	1253	26M	·3880	12·6626	11·443	**1331**	3	2	Ap	8	·05	3	My	7	·58	5	Je	6○	·11	6	Jl	5	·65	1	Au	4	·18
4433	1389	1254	25M	·6467	1·7709	7·600	**1332**	4	6	Mr	27	·42	7	Ap	25	·95	4	Je	24	·01	5	Jl	23	·54	7	Au	22	·07
													2	My	25●○	·48												
4434	1390	1255	25M	·9055	20·4097	5·734	**1333**	6	5	Ap	15○	·32	6	My	14	·85	1	Je	13	·38	2	Jl	12	·91	4	Au	11	·44
4435	1391	1256	26M	·1642	9·5180	1·891	**1334**	7	2	Ap	4○	·69	4	My	4●	·22	5	Je	2	·75	7	Jl	2	·28	1	Jl	31	·81
4436	1392	1257	26M	·4230	28·1569	0·024	**1335**	1	1	Ap	23	·58	3	My	23	·11	4	Je	21	·64	6	Jl	21	·18	7	Au	19	·71
4437	1393	1258	25M	·6818	17·2652	23·736	**1336**	2	5	Ap	11	·95	7	My	11	·48	2	Je	10	·01	3	Jl	9	·54	5	Au	8	·07
4438	1394	1259	25M	·9405	6·3735	19·893	**1337**	4	3	Ap	1	·32	4	Ap	30	·85	6	My	30	·38	7	Je	28	·91	3	Au	26	·97
																					2	Jl	28○	·44				
4439	1395	1260	26M	·1993	25·0124	18·027	**1338**	5	2	Ap	20	·22	3	My	19	·75	5	Je	18	·28	6	Jl	17○	·81	1	Au	16	·34
4440	1396	1261	26M	·4580	14·1207	14·184	**1339**	6	6	Ap	9	·58	1	My	9	·11	2	Je	7	·64	4	Jl	7●○	·17	5	Au	5	·71
4441	1397	1262	25M	·7168	3·2290	10·341	**1340**	7	3	Mr	28	·95	5	Ap	27	·48	7	My	27	·01	3	Jl	25	·07	4	Au	23	·60
																	1	Je	25	·54								
4442	1398	1263	25M	·9755	21·8679	8·474	**1341**	2	2	Ap	16	·85	4	My	16○	·38	5	Je	14	·91	7	Jl	14	·44	1	Au	12	·97
4443	1399	1264	26M	·2343	10·9762	4·632	**1342**	3	7	Ap	6	·21	1	My	5●○	·75	3	Je	4	·28	4	Jl	3	·81	6	Au	2	·34
4444	1400	1265	26M	·4930	0·0845	0·789	**1343**	4	4	Mr	26	·58	7	My	24	·64	2	Je	23	·17	3	Jl	22	·70	5	Au	21	·23
									6	Ap	25●	·11																
4445	1401	1266	25M	·7518	18·7234	26·477	**1344**	5	3	Ap	13	·48	5	My	13	·01	6	Je	11	·54	1	Jl	11	·07	2	Au	9	·60
4446	1402	1267	26M	·0106	7·8317	22·634	**1345**	7	7	Ap	2	·84	2	My	2	·38	3	My	31	·91	5	Je	30	·44	6	Jl	29	·97
																									1	Au	28○	·50
4447	1403	1268	26M	·2693	26·4706	20·767	**1346**	1	6	Ap	21	·74	1	My	21	·28	2	Je	19	·81	4	Jl	19	·34	5	Au	17○	·87
4448	1404	1269	26M	·5281	15·5789	16·924	**1347**	2	4	Ap	11	·11	5	My	10	·64	7	Je	9	·17	1	Jl	8	·70	3	Au	7●	·23
4449	1405	1270	25M	·7868	4·6872	13·082	**1348**	2	1	Mr	30	·48	3	Ap	29	·01	4	My	28	·54	7	Jl	26●	·60	2	Au	25	·13
																	6	Je	27○	·07								
4450	1406	1271	26M	·0456	23·3261	11·215	**1349**	5	7	Ap	18	·38	1	My	17	·91	3	Je	16○	·44	4	Jl	15	·97	6	Au	14	·50

Surya Siddhanta.

Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77529	+ 295·30588	+324·83647 +354·36705
+ 9·880	+ 11·856	+ 13·832	+ 15·808	+ 17·784	+ 19·760	+ 21·736 + 23·712

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	13	·65	4	O	13	·18	5	N	11	·71	7	D	11○	·24	**12**	1	Jr	9	·77		3	F	8	·30	4	Mr	8	·83
7	S	2	·02	1	O	1	·55	3	O	31	·08	4	N	29○	·61		6	D	29	·14	**13**	7	Jr	27	·67	2	F	26	·20
5	S	20	·91	7	O	20	·44	1	N	18○	·98	3	D	18	·51	**14**	5	Jr	17	·04		6	F	15	·57	1	Mr	17	·10
3	S	10	·28	4	O	9	·81	6	N	8	·34	7	D	7	·87	**15**	2	Jr	6	·40		3	F	4	·93	5	Mr	6	·46
7	Au	30	·65	{ 2	S	29○	·18	**Margasira Kshaya**				5	N	27	·24		6	D	26	·77	**16**	{ 1	Jr	25	·30	4	Mr	24○	·36
				{ 3	O	28●	·71															{ 2	F	23	·83				
6	S	17○	·55	1	O	17	·08	2	N	15	·61	4	D	15	·14	**17**	5	Jr	13	·67		7	F	12	·20	1	Mr	13○	·73
3	S	6●○	·91	5	O	6	·44	6	N	4	·97	1	D	4	·50	**18**	3	Jr	3	·04		4	F	1	·57	6	Mr	3	·10
2	S	25●	·81	4	O	25	·34	5	N	23	·87	7	D	23	·40	**19**	1	Jr	21○	·93		3	F	20●	·46	5	Mr	22	·63
7	S	15	·18	1	O	14	·71	3	N	13	·24	4	D	12	·77	**20**	6	Jr	11○	·30		7	F	9●	·83	2	Mr	10	·36
4	S	3	·55	6	O	3	·08	7	N	1	·61	2	D	1	·14		3	D	30○	·67	**21**	5	Jr	29	·20	6	F	27	·73
3	S	22	·44	4	O	21	·97	6	N	20	·50	1	D	20	·04	**22**	2	Jr	18	·57		4	F	17	·10	5	Mr	18	·63
7	S	11	·81	2	O	11	·34	3	N	9	·87	5	D	9●	·40	**23**	6	Jr	7	·93		1	F	6	·46	2	Mr	7	·99
5	S	1	·18	6	S	30	·71	1	O	30○	·24	2	N	28	·77		4	D	28	·30	**24**	5	Jr	26	·83	7	F	25	·36
4	S	19	·08	5	O	18○	·61	7	N	17	·14	1	D	16	·67	**25**	3	Jr	15	·20		4	F	13	·73	6	Mr	15	·26
1	S	8	·44	2	O	7●	·97	4	N	6	·50	6	D	6	·03	**26**	7	Jr	4	·56		2	F	3	·10	3	Mr	4○	·63
7	S	27	·34	1	O	26	·87	3	N	25	·40	4	D	24	·93	**27**	6	Jr	23	·46		1	F	22○	·99	2	Mr	23	·52
4	S	16	·71	6	O	16	·24	7	N	14	·77	2	D	14	·30	**28**	3	Jr	12	·83		5	F	11○	·36	6	Mr	11	·89
2	S	5	·07	3	O	4	·61	5	N	3	·14	6	D	2	·67	**29**	1	Jr	1	·20		2	Jr	30	·73	4	Mr	1	·26
7	S	23	·97	2	O	23	·50	4	N	22	·03	5	D	21○	·56	**30**	7	Jr	20	·09		1	F	18	·63	3	Mr	20	·16
5	S	13	·34	6	O	12	·87	1	N	11	·40	2	D	10○	·93	**31**	4	Jr	9	·46		5	F	7	·99	7	Mr	9	·52
2	S	2	·71	4	O	2	·24	5	O	31	·77	7	N	30●○	·30		1	D	29	·83	**32**	3	Jr	28	·36	4	F	26	·89
1	S	20	·60	3	O	20	·14	4	N	18	·67	6	D	18	·20	**33**	7	Jr	16	·73		2	F	15	·26	3	Mr	16	·79
5	S	9	·97	7	O	9○	·50	2	N	8	·03	3	D	7	·56	**34**	5	Jr	6	·09		6	F	4	·62	1	Mr	6	·16
{ 3	Au	30	·34	6	O	28	·40	7	N	26	·93	**Pausha Kshaya**					2	D	26	·46	**35**	{ 3	Jr	24	·99	7	Mr	25●○	·05
{ 4	S	28○	·87																			{ 5	F	23	·52				
2	S	18○	·24	3	O	17	·77	5	N	16	·30	6	D	15	·83	**36**	1	Jr	14	·36		2	F	12	·89	4	Mr	13	·42
6	S	6●	·60	1	O	6	·13	2	N	4	·66	4	D	4	·20	**37**	5	Jr	2	·73		7	F	1○	·26	1	Mr	2●	·79
5	S	25	·50	7	O	25	·03	1	N	23	·56	3	D	23	·09	**38**	4	Jr	21○	·62		6	F	20	·15	7	Mr	21	·68
2	S	14	·87	4	O	14	·40	5	N	12	·93	7	D	12	·46	**39**	1	Jr	10○	·99		3	F	9	·52	5	Mr	11	·05
7	S	4	·24	1	O	3	·77	3	N	2	·30	4	D	1	·83		6	D	31●	·36	**40**	7	Jr	29	·89	2	F	28	·42
6	S	22	·13	7	O	21	·66	2	N	20	·19	3	D	19	·73	**41**	5	Jr	18	·26		6	F	16	·79	1	Mr	18	·32
3	S	11	·50	5	O	11	·03	6	N	9○	·56	7	D	9●	·09	**42**	2	Jr	7	·62		4	F	6	·15	5	Mr	7	·68
7	Au	31	·87	2	S	30	·40	3	O	29○	·93	5	N	28	·46		6	D	27	·99	**43**	1	Jr	26	·52	3	F	25	·05
6	S	19	·77	1	O	19●	·30	2	N	17	·83	4	D	17	·36	**44**	5	Jr	15	·89		7	F	14	·42	1	Mr	14	·95
4	S	8○	·13	5	O	7●	·66	7	N	6	·19	1	D	5	·72	**45**	3	Jr	4	·26		4	F	2	·79	6	Mr	4○	·32
3	S	27●	·03	4	O	26	·56	6	N	25	·09	7	D	24	·62	**46**	2	Jr	23	·15		3	F	21●○	·68	5	Mr	23	·21
7	S	16	·40	1	O	15	·93	3	N	14	·46	4	D	13	·99	**47**	6	Jr	12	·52		1	F	11●	·05	2	Mr	12	·58
4	S	5	·76	6	O	5	·30	7	N	3	·83	2	D	3	·36	**48**	3	Jr	1○	·89		5	Jr	31	·42	6	F	29	·95
3	S	23	·66	5	O	23	·19	6	N	21	·72	1	D	21○	·25	**49**	2	Jr	19	·79		4	F	18	·32	5	Mr	19	·85
1	S	13	·03	2	O	12	·56	4	N	11	·09	5	D	10○	·62	**50**	7	Jr	9	·15		1	F	7	·68	3	Mr	9	·21

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha ☉'s Anom col. 6 / ☾'s Anom col. 7 Week-day	Month	Day	Fraction	Jyeshta + 29·53059 / + 1·976 Week-day	Month	Day	Fraction	Ashada + 59·06117 / + 3·952 Week-day	Month	Day	Fraction	Sravana + 88·59176 / + 5·928 Week-day	Month	Day	Fraction	Bhadrapada + 118·12235 / + 7·904 Week-day	Month	Day	Fraction
4451	1407	1272	26M	·3043	12·4344	7·372	**1350**	6	4	Ap	7	·74	6	My	7	·27	7	Je	5○	·81	2	Jl	5	·34	3	Au	3	·87
4452	1408	1273	26M	·5731	1·5427	3·529	**1351**	7	{ 2	Mr	28	·11	5	My	26	·17	6	Je	24	·70	1	Jl	24	·23	2	Au	22	·76
									{ 3	Ap	26	·64																
4453	1409	1274	25M	·8219	20·1815	1·663	**1352**	1	1	Ap	15○	·01	2	My	14	·54	4	Je	13	·07	5	Jl	12	·60	7	Au	11	·13
4454	1410	1275	26M	·0806	9·2898	25·375	**1353**	3	5	Ap	4○	·38	6	My	3	·91	1	Je	2	·44	2	Jl	1	·97	{ 4	Jl	31	·50
																									{ 6	Au	30	·03
4455	1411	1276	26M	·3394	27·9287	23·508	**1354**	4	4	Ap	23	·27	5	My	22	·80	7	Je	21	·33	1	Jl	20	·87	3	Au	19	·40
4456	1412	1277	26M	·5981	17·0370	19·665	**1355**	5	1	Ap	12	·64	3	My	12	·17	4	Je	10	·70	6	Jl	10	·23	7	Au	8○	·76
4457	1413	1278	25M	·8565	6·1453	15·823	**1356**	6	6	Ap	1	·01	7	Ap	30	·54	2	My	30	·07	{ 3	Je	28	·60	6	Au	26	·66
																					{ 5	Jl	28○	·13				
4458	1414	1279	26M	·1156	24·7842	13·956	**1357**	1	4	Ap	19	·91	6	My	19	·44	7	Je	17	·97	2	Jl	17○	·50	4	Au	16	·03
4459	1415	1280	26M	·3744	13·8925	10·113	**1358**	2	2	Ap	9	·27	3	My	8	·80	5	Je	7	·33	6	Jl	6●	·86	1	Au	5	·39
4460	1416	1281	26M	·6331	3·0008	6·270	**1359**	3	6	Mr	29	·64	{ 1	Ap	28	·17	4	Je	26●	·23	5	Jl	25	·76	7	Au	24	·29
													{ 2	My	27○	·70												
4461	1417	1282	25M	·8919	21·6397	4·403	**1360**	4	5	Ap	16	·54	7	My	16○	·07	1	Je	14	·60	3	Jl	14	·13	4	Au	12	·66
4462	1418	1283	26M	·1507	10·7480	0·561	**1361**	6	2	Ap	5	·90	4	My	5●	·43	5	Je	3	·97	7	Jl	3	·50	2	Au	2	·03
4463	1419	1284	26M	·4094	29·3869	26·248	**1362**	7	{ 7	Mr	26	·27	3	My	24	·33	4	Je	22	·86	6	Jl	22	·39	7	Au	20	·92
									{ 1	Ap	24●	·80																
4464	1420	1285	26M	·6682	18·4952	22·406	**1363**	1	6	Ap	14	·17	7	My	13	·70	2	Je	12	·23	3	Jl	11	·76	5	Au	10	·29
4465	1421	1286	25M	·9269	7·6035	18·563	**1364**	2	3	Ap	2	·54	5	My	2	·07	6	My	31	·60	1	Jl	30	·13	{ 2	Jl	29	·66
																									{ 4	Au	28○	·19
4466	1422	1287	26M	·1857	26·2424	16·696	**1365**	4	2	Ap	21	·43	3	My	20	·96	5	Je	19	·49	7	Jl	19	·03	1	Au	17	·56
4467	1423	1288	26M	·4444	15·3507	12·853	**1366**	5	6	Ap	10	·80	1	My	10	·33	2	Je	8	·86	4	Jl	8○	·39	5	Au	6●	·92
4468	1424	1289	26M	·7032	4·4590	9·011	**1367**	6	4	Mr	31	·17	5	Ap	29	·70	{ 7	My	29	·23	3	Jl	27●	·29	4	Au	25	·82
																	{ 1	Je	27○	·76								
4469	1425	1290	25M	·9620	23·0979	7·144	**1368**	7	3	Ap	18	·07	4	My	17	·60	6	Je	16○	·13	7	Jl	15	·66	2	Au	14	·19
4470	1426	1291	26M	·2207	12·2062	3·301	**1369**	2	7	Ap	7	·43	1	My	6	·96	3	Je	5●	·49	5	Jl	5	·02	6	Au	3	·55
4471	1427	1292	26M	·4795	1·3144	27·013	**1370**	3	{ 4	Mr	27	·80	7	My	25	·86	2	Je	24	·39	3	Jl	23	·92	5	Au	22	·45
									{ 6	Ap	26○	·33																
4472	1428	1293	26M	·7382	19·9533	25·146	**1371**	4	3	Ap	15○	·70	5	My	15	·23	6	Je	13	·76	1	Jl	13	·29	2	Au	11	·82
4473	1429	1294	25M	·9970	9·0616	21·304	**1372**	5	1	Ap	4	·06	2	My	3	·59	4	Je	2	·13	5	Jl	1	·66	{ 7	Jl	31	·19
																									{ 1	Au	29	·72
4474	1430	1295	26M	·2557	27·7005	19·437	**1373**	7	6	Ap	22	·96	1	My	22	·49	3	Je	21	·02	4	Jl	20	·55	6	Au	19	·08
4475	1431	1296	26M	·5145	16·8088	15·594	**1374**	1	4	Ap	12	·33	5	My	11	·86	7	Je	10	·39	1	Jl	9	·92	3	Au	8○	·45
4476	1432	1297	26M	·7733	5·9171	11·751	**1375**	2	1	Ap	1	·70	3	My	1	·23	4	My	30	·76	{ 6	Je	29	·29	2	Au	27	·35
																					{ 7	Jl	28●○	·82				
4477	1433	1298	26M	·0323	24·5560	9·885	**1376**	3	7	Ap	19	·59	2	My	19	·12	3	Je	17	·65	5	Jl	17●	·19	6	Au	15	·72
4478	1434	1299	26M	·2908	13·6643	6·042	**1377**	5	4	Ap	8	·96	6	My	8	·49	1	Je	7○	·02	2	Jl	6●	·55	4	Au	5	·08
4479	1235	1300	26M	·5495	2·7726	2·199	**1378**	6	2	Mr	29	·33	{ 3	Ap	27	·86	6	Je	25	·92	1	Jl	25	·45	2	Au	23	·98
													{ 5	My	27●○	·39												
4480	1436	1301	26M	·8083	21·4115	0·332	**1379**	7	1	Ap	17	·23	2	My	16○	·76	4	Je	15	·29	5	Jl	14	·82	7	Au	13	·35
4481	1437	1302	26M	·0670	10·5198	24·044	**1380**	1	5	Ap	5	·59	7	My	5●	·12	1	Je	3	·65	3	Jl	3	·18	4	Au	1	·71
4482	1438	1303	26M	·3258	29·1587	22·177	**1381**	3	{ 2	Mr	25○	·96	6	My	24	·02	7	Je	22	·55	2	Jl	22	·08	3	Au	20	·61
									{ 4	Ap	24	·49																
4483	1439	1304	26M	·5845	18·2670	18·335	**1382**	4	1	Ap	13	·86	3	My	13	·39	4	Je	11	·92	6	Jl	11	·45	7	Au	9	·98
4484	1440	1305	26M	·8433	7·3753	14·492	**1383**	5	6	Ap	3	·22	7	My	2	·75	2	Je	1	·29	3	Je	30	·82	{ 5	Jl	30	·35
																									{ 6	Au	28●	·88
4485	1441	1306	26M	·1021	26·0142	12·625	**1384**	6	5	Ap	21	·12	6	My	20	·65	1	Je	19	·18	2	Jl	18○	·71	4	Au	17●	·24
4486	1442	1307	26M	·3608	15·1225	8·782	**1385**	1	2	Ap	10	·49	4	My	10	·02	5	Je	8	·55	7	Jl	8○	·08	1	Au	6	·61
4487	1443	1308	26M	·6196	4·2308	4·940	**1386**	2	6	Mr	34	·86	1	Ap	20	·39	{ 2	My	28	·92	5	Jl	26	·98	7	Au	25	·51
																	{ 4	Je	27●○	·45								
4488	1444	1309	26M	·8783	22·8696	3·073	**1387**	3	5	Ap	18	·75	7	My	18	·28	1	Je	16●	·81	3	Jl	16	·35	4	Au	14	·88
4489	1445	1310	26M	·1371	11·9779	26·785	**1388**	4	3	Ap	7	·12	4	My	6○	·65	6	Je	5●	·18	7	Jl	4	·71	2	Au	3	·24

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 / + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	2	·40	6	O	1	·93	1	O	31	·46	2	N	29●	·99		4	D	29	·52	51	6	Jr	28	·05	7	F	26	·58
4	S	21	·29	5	O	20ↄ	·83	7	N	19	·36	1	D	18	·89	52	3	Jr	17	·42		4	F	15	·95	6	Mr	16	·48
1	S	9	·66	3	O	9ↄ	·19	4	N	7	·72	6	D	7	·25	53	7	Jr	5	·78		2	F	4	·31	3	Mr	5	·85
7	S	28ↄ	·56	2	O	28	·09	3	N	26	·62	5	D	26	·15	54	6	Jr	24	·68		1	F	23	·21	2	Mr	24●	·74
4	S	17●	·93	6	O	17	·46	7	N	15	·99	2	D	15	·52	55	4	Jr	14	·05		5	F	12○	·58	7	Mr	14	·11
2	S	7●	·29	3	O	6	·82	5	N	5	·35	6	D	4	·89	56	1	Jr	3	·42		2	F	1○	·95	4	Mr	2	·48
1	S	25	·19	2	O	24	·72	4	N	23	·25	5	D	22	·78	57	7	Jr	21○	·31		1	F	19	·84	3	Mr	21	·37
5	S	14	·56	7	O	44	·09	1	N	12	·62	3	D	12	·15	58	4	Jr	10●	·68		6	F	9	·21	7	Mr	10	·74
2	S	3	·93	4	O	3	·46	5	N	1	·99	7	D	1	·52		2	D	31●	·05	59	3	Jr	29	·58	5	F	28	·11
1	S	22	·83	3	O	22	·35	4	N	20○	·88	6	D	20	·41	60	7	Jr	18	·95		2	F	17	·48	4	Mr	18	·01
6	S	11	·19	7	O	10	·72	2	N	9ↄ	·25	3	D	8	·78	61	5	Jr	7	·31		6	F	5	·84	1	Mr	7	·37
3	Au	31	·56	5	S	30	·09	6	O	29	·62	1	N	28	·15		2	D	27	·68	62	4	Jr	26	·21	5	F	24	·74
2	S	19ↄ	·45	3	O	18	·99	5	N	17	·52	7	D	17	·05	63	1	Jr	15	·58		3	F	14	·11	4	Mr	15○	·64
6	S	8ↄ	·82	1	O	8	·35	2	N	6	·88	4	D	6	·41	64	5	Jr	4	·94		7	F	3	·47	2	Mr	4●○	·01
5	S	26	·72	7	O	26	·25	1	N	24	·78	3	D	24	·31	65	4	Jr	22	·84		6	F	21●	·37	7	Mr	22	·90
3	S	16	·09	4	O	15	·62	6	N	14	·15	7	D	13	·68	66	2	Jr	12ↄ	·21		3	F	10	·74	5	Mr	12	·27
7	S	5	·45	1	O	4	·98	3	N	3	·51	5	D	3	·05	67	6	Jr	1ↄ	·58		1	Jr	31	·11	2	Mr	1	·64
6	S	24	·35	7	O	23	·88	2	N	22	·41	3	D	21●ↄ	·94	68	5	Jr	20	·47		7	F	19	·00	1	Mr	19	·53
3	S	12	·72	5	O	12	·25	6	N	10	·78	1	D	10	·31	69	2	Jr	8	·84		4	F	7	·37	5	Mr	8	·90
1	S	2	·09	2	O	1	·62	4	O	31○	·15	5	N	29●	·68		7	D	29	·21	70	1	Jr	27	·74	3	F	26	·27
6	S	20	·98	1	O	20ↄ	·51	3	N	19	·04	4	D	18	·57	71	6	Jr	17	·11		7	F	15	·64	2	Mr	17	·17
4	S	10	·35	6	O	10●ↄ	·88	7	N	8	·41	1	D	7	·94	72	3	Jr	6	·47		5	F	5	·00	6	Mr	5	·53
3	S	28	·25	4	O	27	·78	6	N	26	·31	7	D	25	·84	73	2	Jr	24	·37		3	F	22ↄ	·90	5	Mr	24●	·43
7	S	17●	·61	2	O	17	·15	3	N	15	·68	5	D	15	·21	74	6	Jr	13	·74		1	F	12ↄ	·27	2	Mr	13●	·80
4	S	6	·98	6	O	6	·51	1	N	5	·04	2	D	3	·57	75	4	Jr	3	·10		5	F	1●○	·63	7	Mr	3	·17
3	S	25	·88	5	O	25	·41	6	N	23	·94	1	D	23	·47	76	3	Jr	22	·00		4	F	20	·53	6	Mr	21	·06
1	S	14	·25	2	O	13	·78	4	N	12	·31	5	D	11	·84	77	7	Jr	10●	·37		1	F	8	·90	3	Mr	10	·43
5	S	3	·61	7	O	3	·14	1	N	1	·67	3	D	1ↄ	·21		4	D	30●	·74	78	6	Jr	29	·27	7	F	27	·80
4	S	22	·51	6	O	22	·04	7	N	20ↄ	·57	2	D	20	·10	79	3	Jr	18	·63		5	F	17	·16	6	Mr	18	·69
1	S	11ↄ	·88	3	O	11	·41	4	N	9	·94	6	D	9	·47	80	1	Jr	8	·00		2	F	6	·53	4	Mr	7	·06
6	Au	31	·25	{ 7	S	29ↄ	·78	**Margasira Kshaya**				3	N	27	·84		5	D	27	·37	81	6	Jr	25	·90	1	F	24	·43
				{ 2	O	29	·31																						
5	S	19ↄ	·14	6	O	18●	·67	1	N	17	·20	2	D	16	·73	82	4	Jr	15	·27		5	F	13	·80	7	Mr	15○	·33
2	S	8○	·51	4	O	8	·04	5	N	6	·57	7	D	6	·10	83	1	Jr	4	·63		3	F	3	·16	4	Mr	4	·69
1	S	27	·41	2	O	26	·94	4	N	25	·47	6	D	25	·00	84	7	Jr	23○	·53		2	F	22	·06	3	Mr	22	·59
5	S	15	·77	7	O	15	·31	1	N	13	·84	3	D	13	·37	85	4	Jr	11○	·90		6	F	10	·43	7	Mr	11	·96
3	S	5	·14	4	O	4	·67	6	N	3	·20	7	D	2	·73	86	2	Jr	1●ↄ	·26		3	Jr	30	·79	5	Mr	1	·33
2	S	24	·04	3	O	23	·57	5	N	22	·10	6	D	21●	·63	87	1	Jr	20	·16		2	F	18	·69	4	Mr	20	·22
6	S	13	·41	7	O	12	·94	2	N	11ↄ	·47	4	D	11●	·00	88	5	Jr	9	·53		7	F	8	·06	1	Mr	8	·59
3	S	1	·77	5	O	1	·30	6	O	30ↄ	·83	1	N	29	·37		2	D	28	·90	89	4	Jr	27	·43	5	F	25	·96

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and Day A.D.	Fraction of Day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha. Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
								☉'s Anom col. 6					+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
								☾'s Anom col. 7					+ 1·976				+ 3·952				+ 5·928				+ 7·904			
4490	1446	1311	26M	·3958	1·0862	22·942	**1389**	6	7	Mr	27	·49	2	Ap	26●○	·02	5	Je	24	·08	6	Jl	23	·61	1	Au	22	·14
													3	My	25	·55												
4491	1447	1312	26M	·6546	19·7251	21·075	**1390**	7	6	Ap	15○	·39	7	My	14	·92	2	Je	13	·45	3	Jl	12	·98	5	Au	11	·51
4492	1448	1313	26M	·9134	8 8334	17·232	**1391**	1	3	Ap	4●	·75	5	My	4	·28	6	Je	2	·81	1	Jl	2	·34	2	Jl	31	·87
																									4	Au	30	·41
4493	1449	1314	26M	·1721	27·4723	15·366	**1392**	2	2	Ap	22	·65	4	My	22	·18	5	Je	20	·71	7	Jl	20	·24	1	Au	18○	·77
4494	1450	1315	26M	·4309	16·5806	11·523	**1393**	4	7	Ap	12	·02	1	My	11	·55	3	Je	10	·08	4	Jl	9	·61	6	Au	8●○	·14
4495	1451	1316	26M	·6896	5·6889	7·680	**1394**	5	4	Ap	1	·38	6	My	1	·91	7	My	30	·45	1	Je	28	·98	5	Au	27	·04
																					3	Jl	28	·51				
4496	1452	1317	26M	·9484	24·3278	5·813	**1395**	6	3	Ap	20	·28	4	My	19	·81	6	Je	18○	·34	7	Jl	17	·87	2	Au	16	·40
4497	1453	1318	26M	·2071	13·4361	1·970	**1396**	7	7	Ap	8	·65	2	My	8	·18	3	Je	6○	·71	5	Jl	6	·24	6	Au	4	·77
4498	1454	1319	26M	·4659	2·5444	25·683	**1397**	2	5	Mr	29	·02	6	Ap	27	·55	2	Je	25	·61	4	Jl	25	·14	5	Au	23	·67
													1	My	27●○	·08												
4499	1455	1320	26M	·7247	21·1833	23·816	**1398**	3	3	Ap	16	.91	5	My	16	·44	6	Je	14	·97	1	Jl	14	·51	3	Au	13	·04
4500	1456	1321	26M	·9834	10·2916	19·973	**1399**	4	1	Ap	6○	·28	2	My	5	·81	4	Je	4	·34	5	Jl	3	·87	7	Au	2	·40
4501	1457	1322	26M	·2422	28·9305	18·106	**1400**	5	7	Ap	24	·18	1	My	23	·71	3	Je	22	·24	4	Jl	21	·77	6	Au	20	·30
4502	1458	1323	26M	·5009	18·0388	14·264	**1401**	7	4	Ap	13	·55	6	My	13	·08	7	Je	11	·61	2	Jl	11	·14	3	Au	9	·67
4503	1459	1324	26M	·7597	7·1471	10·421	**1402**	1	1	Ap	2	·91	3	My	2	·44	4	My	31	·97	6	Je	30	·50	1	Jl	30○	·03
																									2	Au	28	·57
4504	1460	1325	27M	·0184	25·7860	8·554	**1403**	2	7	Ap	21	·81	2	My	21	·34	3	Je	19	·87	5	Jl	19○	·40	6	Au	17	·93
4505	1461	1326	26M	·2772	14·8943	4·711	**1404**	3	5	Ap	10	·18	6	My	9	·71	1	Je	8	·24	2	Jl	7○	·77	4	Au	6	·30
4506	1462	1327	26M	·5360	4·0026	0·869	**1405**	5	2	Mr	30	·54	4	Ap	29	·07	5	My	28	·61	1	Jl	26	·67	3	Au	25	·20
																	7	Je	27	·14								
4507	1463	1328	26M	·7947	22·6414	26·556	**1406**	6	1	Ap	18	·44	2	My	17○	·97	4	Je	16●	·50	6	Jl	16	·03	7	Au	14	·56
4508	1464	1329	27M	·0535	11·7497	22·714	**1407**	7	5	Ap	7	·81	7	My	7○	·34	1	Je	5●	·87	3	Jl	5	·40	4	Au	3	·93
4500	1465	1330	26M	·3122	0·8580	18·871	**1408**	1	3	Mr	27	·18	6	My	25	·24	7	Je	23	·77	2	Jl	23	·30	3	Au	21	·83
									4	Ap	25●○	·71																
4510	1466	1331	26M	·5710	19·4969	17·004	**1409**	3	2	Ap	15	·07	3	My	14	·60	5	Je	13	·13	6	Jl	12	·67	1	Au	11	·20
4511	1467	1332	26M	·8297	8·6052	13·161	**1410**	4	6	Ap	4	·44	7	My	3	·97	2	Je	2	·50	4	Jl	2	·03	5	Jl	31	·56
																									7	Au	30○	·09
4512	1468	1333	27M	·0885	27·2441	11·295	**1411**	5	5	Ap	23	·34	6	My	22	·87	1	Je	21	·40	2	Jl	20	·93	4	Au	19○	·46
4513	1469	1334	26M	·3472	16·3524	7·453	**1412**	6	2	Ap	11	·71	4	My	11	·24	5	Je	9	·77	7	Jl	9	·30	1	Au	7	·83
4514	1470	1335	26M	·6060	5·4607	3·609	**1413**	1	7	Ap	1	·07	1	Ap	30	·60	3	My	30	·13	6	Jl	28	·19	7	Au	26	·72
																	4	Je	28○	·66								
4515	1471	1336	26M	·8648	24·0996	1·742	**1414**	2	5	Ap	19	·97	7	My	19	·50	2	Je	18○	·03	3	Jl	17	·56	5	Au	16	·09
4516	1472	1337	27M	·1235	13·2079	25·454	**1415**	3	3	Ap	9	·34	4	My	8	·87	6	Je	7●○	·40	7	Jl	6	·93	2	Au	5	·46
4517	1473	1338	26M	·3823	2·3162	21·612	**1416**	4	7	Mr	28	·70	2	Ap	27	·23	5	Je	25	·30	6	Jl	24	·83	1	Au	23	·36
													3	My	26●	·77												
4518	1474	1339	26M	·6410	20·9551	19·745	**1417**	6	6	Ap	16○	·60	1	My	16	·13	2	Je	14	·66	4	Jl	14	·19	5	Au	12	·72
4519	1475	1340	26M	·8998	10·0634	15·902	**1418**	7	3	Ap	5○	·97	5	My	5	·50	7	Je	4	·03	1	Jl	3	·56	3	Au	2	·09
4520	1476	1341	27M	·1585	28·7023	14·035	**1419**	1	2	Ap	24	·87	4	My	24	·40	5	Je	22	·93	7	Jl	22	·46	1	Au	20	·99
4521	1477	1342	26M	·4173	17·8106	10·193	**1420**	2	7	Ap	13	·23	1	My	12	·76	3	Je	11	·29	4	Jl	10	·83	6	Au	9○	·36
4522	1478	1343	26M	·6761	6·9189	6·350	**1421**	4	4	Ap	2	·60	6	My	2	·13	7	My	31	·66	2	Je	30	·19	5	Au	28●	·25
																					3	Jl	29○	·72				
4523	1479	1344	26M	·9348	23·5578	4·483	**1422**	5	3	Ap	21	·50	5	My	21	·03	6	Je	19	·56	1	Jl	19○	·09	2	Au	17	·62
4524	1480	1345	27M	·1936	14·6660	0·640	**1423**	6	7	Ap	10	·87	2	My	10	·40	3	Je	8	·93	5	Jl	8●	·46	6	Au	6	·99
4525	1481	1346	26M	·4523	3·7743	24·352	**1424**	7	5	Mr	30	·23	6	Ap	28	·76	1	My	28○	·29	4	Jl	26	·35	5	Au	24	·89
																	2	Je	26	·82								
4526	1482	1347	26M	·7111	22·4132	22·485	**1425**	2	4	Ap	18	·13	5	My	17○	·66	7	Je	16	·19	1	Jl	15	·72	3	Au	14	·25
4527	1483	1348	26M	·9698	11·5215	18·644	**1426**	3	1	Ap	7	·50	3	My	7○	·03	4	Je	5	·56	6	Jl	5	·09	7	Au	3	·62
4528	1484	1349	27M	·2286	0·6298	14·800	**1427**	4	5	Mr	27○	·86	1	My	25	·93	3	Je	24	·46	4	Jl	23	·99	6	Au	22	·52
									7	Ap	26	·39																

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·35293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+21·736 +23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	20	·67	4	O	20○	·20	5	N	18	·73	7	D	18	·26	**90**	1	Jr	16	·79		3	F	15	·32	4	Mr	16	·85
7	S	10	·04	1	O	9●	·57	3	N	8	·10	4	D	7	·63	**91**	6	Jr	6	·16		7	F	4	·69	2	Mr	6○	·22
5	S	28	·94	7	O	28	·47	2	N	27	·00	3	D	26	·53	**92**	5	Jr	25	·06		6	F	23○	·59	1	Mr	24	·12
3	S	17	·30	4	O	16	·83	6	N	15	·36	7	D	14	·89	**93**	2	Jr	13	·43		3	F	11○	·96	5	Mr	13	·49
7	S	6	·67	2	O	6	·20	3	N	4	·73	5	D	4	·26	**94**	6	Jr	2	·79		1	F	1●	·32	2	Mr	2	·85
6	S	25	·57	1	O	25	·10	2	N	23	·63	4	D	23	·16	**95**	5	Jr	21	·69		7	F	20	·22	1	Mr	21	·75
3	S	14	·93	5	O	14	·47	7	N	13	·00	1	D	12○	·53	**96**	3	Jr	11	·06		4	F	9	·59	6	Mr	10	·12
1	S	3	·30	2	O	2	·83	4	N	1	·36	5	N	30○	·89		7	D	30	·42	**97**	1	Jr	28	·95	3	F	27	·49
7	S	22	·20	1	O	21	·73	3	N	20	·26	4	D	18	·79	**98**	6	Jr	18	·32		7	F	16	·85	2	Mr	18	·38
4	S	11	·57	6	O	11○	·10	7	N	9●	·63	2	D	9	·16	**99**	3	Jr	7	·69		5	F	6	·22	6	Mr	7	·75
1	Au	31	·93	3 4	S O	30○ 29	·46 ·99	6	N	28	·53	**Pausha. Kshaya.**				**14**	1	D	28	·06	**00**	2	Jr	26	·59	4 5	Fr Mr	25 25●○	·12 ·65
7	S	18○	·83	2	O	18	·36	3	N	16	·89	5	D	16	·42	**01**	6	Jr	14	·95		1	F	13	·48	3	Mr	15●	·01
5	S	8●	·20	6	O	7	·73	1	N	6	·26	2	D	5	·79	**02**	4	Jr	4	·32		5	F	2○	·85	7	Mr	4●	·38
4	S	27	·10	5	O	26	·63	7	N	25	·16	1	D	24	·69	**03**	3	Jr	23○	·22		4	F	21	·75	6	Mr	23	·28
1	S	16	·46	2	O	15	·99	4	N	14	·52	6	D	14	·05	**04**	7	Jr	12○	·59		2	F	11	·12	3	Mr	11	·65
5	S	4	·83	7	O	4	·36	1	N	2	·89	3	D	2	·42		4	D	31●	·95	**05**	6	Jr	30	·48	1	Mr	1	·01
4	S	23	·73	6	O	23	·26	7	N	21○	·79	2	D	21	·32	**06**	3	Jr	19	·85		5	F	18	·38	6	Mr	19	·91
2	S	13	·09	3	O	12	·63	5	N	11○	·16	6	D	10	·69	**07**	1	Jr	9	·22		2	F	7	·75	4	Mr	9	·28
6	S	2	·46	7	O	1	·99	2	O	31○	·52	4	N	30	·05		5	D	29	·58	**08**	7	Jr	28	·11	1	F	26	·64
5	S	20	·36	6	O	19●	·89	1	N	18	·42	2	D	17	·95	**09**	4	Jr	16	·48		6	F	15	·01	7	Mr	16○	·54
2	S	9	·73	4	O	9●	·26	5	N	7	·79	7	D	7	·32	**10**	1	Jr	5	·85		3	F	4	·38	4	Mr	5○	·91
1	S	28	·62	3	O	28	·15	4	N	26	·69	6	D	26	·22	**11**	7	Jr	24	·75		2	F	23○	·28	3	Mr	24	·81
5	S	17	·99	7	O	17	·52	2	N	16	·05	3	D	15	·58	**12**	5	Jr	14	·11		6	F	12●	·34	1	Mr	13	·17
3	S	6	·36	4	O	5	·89	6	N	4	·42	7	D	3	·95	**13**	2	Jr	2	·48		4	F	1●	·01	5	Mr	2	·54
2	S	25	·26	3	O	24	·79	5	N	23	·32	6	D	22○	·85	**14**	1	Jr	21	·38		2	F	19	·91	4	Mr	21	·44
6	S	14	·62	1	O	14	·15	2	N	12	·68	4	D	12○	·21	**15**	5	Jr	18	·75		7	F	9	·28	1	Mr	10	·81
3	S	3	·99	5	O	3	·52	7	N	2	·05	1	D	1	·58		3	D	31	·11	**16**	4	Jr	29	·64	6	Fr	28	·17
2	S	21	·89	4	O	21○	·42	5	N	19	·95	7	D	19	·48	**17**	2	Jr	13	·01		3	F	16	·54	5	Mr	18	·07
7	S	11	·25	1	O	10○	·79	3	N	9	·32	4	D	8	·85	**18**	6	Jr	7	·38		7	F	5	·91	2	Mr	7	·44
4	Au	31	·62	6 7	S O	30○ 29	·15 ·68	2	N	28	·21	3	D	27	·74	**19**	5	Jr	26	·27		6	F	24	·81	1	Mr	26●○	·34
3	S	19	·52	5	O	19	·05	6	N	17	·58	1	D	17	·11	**20**	2	Jr	15	·64		4	F	14○	·17	5	Mr	14	·70
7	S	7●	·89	2	O	7	·42	3	N	5	·95	5	D	5	·48	**21**	7	Jr	4	·01		1	F	2○	·54	3	Mr	4	·07
6	S	26	·78	1	O	26	·31	2	N	24	·85	4	D	24	·38	**22**	5	Jr	22●○	·91		7	F	21	·44	1	Mr	22	·97
4	S	16	·15	5	O	15	·68	7	N	14	·21	1	D	13	·74	**23**	3	Jr	12	·27		4	F	10	·80	6	Mr	12	·33
1	S	5	·52	3	O	5	·05	4	N	3	·58	6	D	3○	·11	**24**	7	Jr	1●	·64		2	Jr	31	·17	3	F	29	·70
7	S	23	·42	1	O	22	·95	3	N	21○	·48	5	D	21	·01	**25**	6	Jr	19	·54		1	F	18	·07	2	Mr	19	·60
4	S	12	·78	6	O	12	·31	7	N	10●○	·84	2	D	10	·37	**26**	3	Jr	8	·91		5	F	7	·44	6	Mr	8	·97
2	S	2	·15	3	O	1	·68	5	O	31	·21	6	N	29	·74		1	D	29	·27	**27**	2	Jr	27	·80	4	F	26	·33
1	S	21	·05	2	O	20	·58	4	N	19	·11	5	D	18	·64	**28**	7	Jr	17	·17		1	F	15	·70	3	Mr	16○	·23

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A. D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha ☉'s Anom col. 6 + 29·53059; ☾'s Anom col. 7 + 1·976 Week-day	Month	Day	Fraction	Jyeshta + 59·06117; + 3·952 Week-day	Month	Day	Fraction	Ashada + 88·59176; + 5·928 Week-day	Month	Day	Fraction	Sravana + 118·12235; + 7·904 Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
4529	1485	1350	26M	·4873	19·2687	12·933	**1428**	5	4	Ap	14	·76	6	My	14	·29	7	Je	12	·82	2	Jl	12	·35	3	Au	10	·88
4530	1486	1351	26M	·7461	8·3770	9·090	**1429**	7	2	Ap	4	·13	3	My	3	·66	5	Je	2	·19	6	Jl	1	·72	{ 1	Jl	31	·25
																									{ 2	Au	29○	·78
4531	1487	1352	27M	·0049	27·0159	7·224	**1430**	1	1	Ap	23	·03	2	My	22	·56	4	Je	21	·09	5	Jl	20	·62	7	Au	19●○	·15
4532	1488	1353	27M	·2636	16·1242	3·381	**1431**	2	5	Ap	12	·39	6	My	11	·92	1	Je	10	·45	2	Jl	9○	·99	4	Au	8●	·52
4533	1489	1354	26M	·5224	5·2325	27·093	**1432**	3	2	Mr	31	·76	4	Ap	30	·29	{ 5	My	29	·82	1	Jl	27	·88	3	Au	26	·41
																	{ 7	Je	28○	·35								
4534	1490	1355	26M	·7811	23·8714	25·226	**1433**	5	1	Ap	19	·66	3	My	19	·19	4	Je	17○	·72	6	Jl	17	·25	7	Au	15	·78
4535	1491	1356	27M	·0399	12·9797	21·383	**1434**	6	6	Ap	9	·03	7	My	8	·56	2	Je	7●	·09	3	Jl	6	·62	5	Au	5	·15
4536	1492	1357	27M	·2986	2·0880	17·541	**1435**	7	3	Mr	29	·39	{ 4	Ap	27○	·92	7	Je	25	·98	2	Jl	25	·51	4	Au	24	·05
													{ 6	My	27	·45												
4537	1493	1358	26M	·5574	20·7269	15·674	**1436**	1	2	Ap	16○	·29	3	My	15	·82	5	Je	14	·35	6	Jl	13	·88	1	Au	12	·41
4538	1494	1359	26M	·8162	9·8352	11·831	**1437**	3	6	Ap	5○	·66	1	My	5	·19	2	Je	8	·72	4	Jl	3	·25	5	Au	1	·78
4539	1495	1360	27M	·0749	28·4741	8·964	**1438**	4	5	Ap	24	·55	7	My	24	·09	1	Je	22	·62	3	Jl	22	·15	4	Au	20	·68
4540	1496	1361	27M	·3337	17·5824	6·122	**1439**	5	2	Ap	13	·92	4	My	13	·45	5	Je	11	·98	7	Jl	11	·51	2	Au	10○	.04
4541	1497	1362	26M	·5924	6·6907	2·279	**1440**	6	7	Ap	2	·29	1	My	1	·81	3	My	31	·35	{ 4	Je	29	·88	7	Au	27	·94
																					{ 6	Jl	29○	·41				
4542	1498	1363	26M	·8512	25·3295	0·412	**1441**	1	6	Ap	21	·19	7	My	20	·72	2	Je	19	·25	3	Jl	18●	·78	5	Au	17	·31
4543	1499	1364	27M	·1099	14·4378	24·124	**1442**	2	3	Ap	10	·55	5	My	10	·08	6	Je	8○	·61	1	Jl	8	·15	2	Au	6	·68
4544	1500	1365	27M	·3687	3·5461	20·281	**1443**	3	7	Mr	30	·92	2	Ap	29	·45	{ 3	My	28○	·98	7	Jl	27	·04	1	Au	25	·57
																	{ 5	Je	27	·51								
4545	1501	1366	26M	·6275	22·1850	18·414	**1444**	4	6	Ap	17	·82	1	My	17○	·35	2	Je	15	·88	4	Jl	15	·41	5	Au	13	·94
4546	1502	1367	26M	·8862	11·2933	14·572	**1445**	6	4	Ap	7	·18	5	My	6●	·71	7	Je	5	·25	1	Jl	4	·78	3	Au	3	·31
4547	1503	1368	27M	·1450	0·4016	10·729	**1446**	7	{ 1	Mr	27○	·55	4	My	25	·61	6	Je	24	·14	7	Jl	23	·67	2	Au	22	·20
									{ 3	Ap	26●	·08																
4548	1504	1369	27M	·4037	19·0405	8·862	**1447**	1	7	Ap	15	·45	1	My	14	·98	3	Je	13	·51	5	Jl	13	·04	6	Au	11	·57
4549	1505	1370	26M	·6625	8·1488	5·019	**1448**	2	4	Ap	3	·82	6	My	3	·35	7	Je	1	·88	2	Jl	1	·41	{ 3	Jl	30	·94
																									{ 5	Au	29●○	·47
4550	1506	1371	26M	·9212	26·7877	3·153	**1449**	4	3	Ap	22	·71	5	My	22	·24	6	Je	20	·77	1	Jl	20○	·31	2	Au	18	·84
4551	1507	1372	27M	·1800	15·8960	26·864	**1450**	5	1	Ap	12	·08	2	My	11	·61	4	Je	10	·14	5	Jl	9○	·67	7	Au	8	·20
4552	1508	1373	27M	·4387	5·0043	23·022	**1451**	6	5	Ap	1	·45	6	Ap	30	·98	{ 1	My	30	·51	4	Jl	28	·57	6	Au	27	·10
																	{ 3	Je	29○	·04								
4553	1509	1374	26M	·6975	23·6432	21·155	**1452**	7	4	Ap	19	·35	5	My	18	·88	7	Je	17	·41	1	Jl	16	·94	3	Au	15	·47
4554	1510	1375	26M	·9563	12·7515	17·312	**1453**	2	1	Ap	8	·71	2	My	8○	·24	4	Je	6●	·77	6	Jl	6	·30	7	Au	4	·83
4555	1511	1376	27M	·2150	1·8598	13·469	**1454**	3	6	Mr	29	·08	{ 7	Ap	27●○	·61	3	Je	25	·67	5	Jl	25	·20	6	Au	23	·73
													{ 2	My	27	·14												
4556	1512	1377	27M	·4738	20·4987	11·603	**1455**	4	4	Ap	16●○	·98	6	My	16	·51	1	Je	15	·04	2	Jl	14	·57	4	Au	13	·10
4557	1513	1378	26M	·7325	9·6070	7·760	**1456**	5	2	Ap	5●	·34	3	My	4	·87	5	Je	3	·41	6	Jl	2	·94	1	Au	1	·47
4558	1514	1379	26M	·9913	28·2459	5·893	**1457**	7	1	Ap	24	·24	2	My	23	·77	4	Je	22	·30	5	Jl	21	·83	7	Au	20○	·36
4559	1515	1380	27M	·2500	17·3542	2·050	**1458**	1	5	Ap	13	·61	7	My	13	·14	1	Je	11	·67	3	Jl	11	·20	4	Au	9○	·73
4560	1516	1381	27M	·5088	6·4625	25·762	**1459**	2	2	Ap	2	·98	4	My	2	·51	6	Je	1	·04	{ 7	Je	30	·57	3	Au	28	·63
																					{ 2	Jl	30	·10				
4561	1517	1382	26M	·7676	25·1013	23·896	**1460**	3	1	Ap	20	·87	3	My	20	·40	4	Je	18○	·93	6	Jl	18●	·47	1	Au	17	·00
4562	1518	1383	27M	·0253	14·2096	20·053	**1461**	5	6	Ap	10	·24	7	My	9	·77	2	Je	8○	·30	3	Jl	7●	·83	5	Au	6	·36
4563	1519	1384	27M	·2851	3·3179	16·210	**1462**	6	3	Mr	30	·61	5	Ap	29	·14	{ 6	My	28●○	·67	2	Jl	26	·73	4	Au	25	·26
																	{ 1	Je	27	·20								
4564	1520	1385	27M	·5438	21·9568	14·343	**1463**	7	2	Ap	18	·51	4	My	18●	·04	5	Je	16	·57	7	Jl	16	·10	1	Au	14	·63
4565	1521	1386	26M	·8026	11·0651	10·501	**1464**	1	6	Ap	6○	·87	1	My	6●	·40	2	Je	4	·93	4	Jl	4	·46	5	Au	2	·99
4566	1522	1387	27M	·0613	0·1734	6·658	**1465**	3	5	Ap	25	·77	7	My	25	·30	1	Je	23	·83	3	Jl	23	·36	4	Au	21	·89
4567	1523	1388	27M	·3201	18·8123	4·791	**1466**	4	3	Ap	15	·15	4	My	14	·67	6	Je	13	·20	7	Jl	12	·73	2	Au	11	·26

Surya Siddhanta.

+ 147·65293	+ 177·18353	+206·71411	+ 236·24470	+ 265·77529	+ 295·30588	{ +324·83647 +354·36705
+ 9·880	+ 11·856	+ 13·832	+ 15·808	+ 17·784	+ 19·760	{ +21·736 +23·712

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	9○	·41	6	O	8●	·95	1	N	7	·48	3	D	7	·01	**29**	4	Jr	5	·54		6	F	4	·07	7	Mr	5●○	·60
4	S	28	·31	5	O	27	·84	7	N	26	·37	1	D	25	·90	**30**	3	Jr	24	·43		4	F	22	·96	6	Mr	24	·50
1	S	17	·68	3	O	17	·21	4	N	15	·74	6	D	15	·27	**31**	7	Jr	13	·80		2	F	12	·33	3	Mr	13	·86
6	S	7	·05	7	O	6	·58	2	N	5	·11	3	D	4	·64	**32**	5	Jr	3○	·17		6	F	1●	·70	1	Mr	2	·23
4	S	24	·94	6	O	24	·47	1	N	23	·01	2	D	22○	·54	**33**	4	Jr	21	·07		5	F	19	·60	7	Mr	21	·13
2	S	14	·31	3	O	13	·84	5	N	12	·37	6	D	11	·90	**34**	1	Jr	10	·43		2	F	8	·96	4	Mr	10	·49
6	S	3	·68	1	O	3	·21	2	N	1	·74	4	D	1	·27		5	D	30	·80	**35**	7	Jr	29	·33	1	F	27	·86
5	S	22	·58	7	O	22○	·11	1	N	20●	·64	3	D	20	·17	**36**	4	Jr	18	·70		6	F	17	·23	7	Mr	17	·76
2	S	10	·94	4	O	10○	·47	6	N	9	·00	7	D	8	·53	**37**	2	Jr	7	·07		3	F	5	·60	5	Mr	7	·13
7	Au	31	·31	{ 1	S	29●	·84	4	N	27	·90	6	D	27	·43	**38**	7	Jr	25	·96		2	F	24○	·49	4	Mr	26	·02
				{ 3	O	29	·37																						
6	S	19●	·21	7	O	18	·74	2	N	17	·27	3	D	16	·80	**39**	5	Jr	15	·33		6	F	13○	·86	1	Mr	15	·39
3	S	8	·57	5	O	8	·11	6	N	6	·64	1	D	6	·17	**40**	2	Jr	4	·70		4	F	3○	·23	5	Mr	3	·76
2	S	26	·47	4	O	26	·00	5	N	24	·53	7	D	24	·06	**41**	1	Jr	22●	·59		3	F	21	·13	4	Mr	22	·66
6	S	15	·84	1	O	15	·37	2	N	13	·90	4	D	13○	·43	**42**	5	Jr	11●	·96		7	F	10	·49	2	Mr	12	·02
4	S	5	·21	5	O	4	·74	7	N	3	·27	1	D	2○	·80	**43**	3	Jr	1	·33		4	Jr	30	·86	6	Mr	1	·39
3	S	24	·10	4	O	23	·63	6	N	22○	·17	7	D	21	·70	**44**	2	Jr	20	·23		3	F	18	·76	5	Mr	19	·29
7	S	12	·47	2	O	12	·00	3	N	10●	·53	5	D	10	·06	**45**	6	Jr	8	·59		1	F	7	·12	2	Mr	8	·65
4	S	1	·84	6	O	1	·37	7	O	30	·90	2	N	29	·43		3	D	28	·96	**46**	5	Jr	27	·49	7	F	26	·02
3	S	20○	·73	5	O	20	·27	6	N	18	·80	1	D	18	·33	**47**	2	Jr	16	·86		4	F	15	·39	5	Mr	16○	·92
1	S	10●○	·10	2	O	9	·63	4	N	8	·16	5	D	7	·69	**48**	7	Jr	6	·22		1	F	4	·75	3	Mr	5●	·29
7	S	28	·00	1	O	27	·53	3	N	26	·06	4	D	25	·59	**49**	6	Jr	24	·12		7	F	22	·65	2	Mr	24	·18
4	S	17	·37	5	O	16	·90	7	N	15	·43	1	D	14	·96	**50**	3	Jr	13○	·49		5	F	12	·02	6	Mr	13	·55
1	S	6	·73	3	O	6	·26	4	N	4	·79	6	D	4	·33	**51**	7	Jr	2○	·86		2	F	1	·39	3	Mr	2	·92
7	S	25	·63	2	O	25	·16	3	N	23	·62	5	D	23●	·22	**52**	6	Jr	21	·75		1	F	20	·28	2	Mr	20	·81
5	S	14	·00	6	O	13	·53	1	N	12	·06	2	D	11●	·59	**53**	4	Jr	19	·12		5	F	8	·65	7	Mr	10	·18
2	S	3	·37	3	O	2	·90	5	N	1○	·43	6	N	30	·96		1	D	30	·49	**54**	3	Jr	29	·02	4	F	27	·55
1	S	22	·26	2	O	21○	·79	4	N	20	·32	5	D	19	·85	**55**	7	Jr	18	·39		1	F	16	·92	3	Mr	18	·45
5	S	11	·63	7	O	11	·16	1	N	9	·69	3	D	9	·22	**56**	4	Jr	7	·75		6	F	6	·28	7	Mr	6○	·81
3	Au	31	·00	{ 4	S	29	·53	7	N	27	·59	2	D	27	·12	**57**	3	Jr	25	·65		5	F	24○	·18	6	Mr	25	·71
				{ 6	O	29	·06																						
1	S	18	·89	3	O	18	·43	4	N	16	·96	6	D	16	·49	**58**	1	Jr	15	·02		2	F	13○	·55	4	Mr	15	·08
6	S	8	·26	7	O	7	·79	2	N	6	·32	3	D	5	·85	**59**	5	Jr	4	·38		6	F	2●	·91	1	Mr	4	·45
5	S	27	·16	6	O	26	·69	1	N	25	·22	2	D	24○	·75	**60**	4	Jr	13	·28		5	F	21	·81	7	Mr	22	·34
2	S	15	·53	4	O	15	·06	5	N	13	·59	7	D	13○	·12	**61**	1	Jr	11	·65		3	F	10	·18	4	Mr	11	·71
6	S	4	·89	1	O	4	·42	2	N	2	·95	4	D	2●○	·49	**62**	6	Jr	1	·02		7	Jr	30	·55	2	Mr	1	·08
5	S	23	·79	7	O	23	·32	1	N	21●	·85	3	D	21	·38	**63**	4	Jr	19	·91		6	F	18	·44	7	Mr	19	·97
3	S	13	·16	4	O	12	·69	6	N	11●	·22	7	D	10	·75	**64**	2	Jr	9	·28		3	F	7	·81	5	Mr	8	·34
7	S	1	·53	2	O	1○	·06	3	O	30	·59	5	N	29	·12		6	D	28	·65	**65**	1	Jr	27	·18	{ 2	F	25	·71
																										{ 4	Mr	27○	·24
6	S	20○	·42	7	O	19	·95	2	N	16	·48	4	D	18	·01	**66**	5	Jr	16	·55		7	F	15	·08	1	Mr	16	·61
3	S	9○	·79	5	O	9	·32	6	N	7	·85	1	D	7	·38	**67**	2	Jr	5	·91		4	F	4	·44	5	Mr	5●	·97

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A. D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A. D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
								⊙'s Anom col. 6					+ 29·53059				+ 52·06117				+ 88·59176				+ 118·12235			
								☾'s Anom col. 7					+ 1·976				+ 3·952				+ 5·928				+ 7·904			
4568	1524	1389	27M	·5789	7·9206	0·948	**1467**	5	7	Ap	4	·50	2	My	4	·03	3	Je	2	·56	5	Jl	2	·09	6	Jl	31○	·63
																									1	Au	30	·16
4569	1525	1390	26M	·8376	26·5595	26·636	**1468**	6	6	Ap	22	·40	7	My	21	·93	2	Je	20	·46	3	Jl	19○	·99	5	Au	18	·52
4570	1526	1391	27M	·0964	15·6578	22·793	**1469**	1	3	Ap	11	·77	5	My	11	·30	6	Je	9	·83	1	Jl	9●○	·36	2	Au	7	·89
4571	1527	1392	27M	·3551	4·7761	18·951	**1470**	2	1	Ap	1	·14	2	Ap	30	·67	4	My	30	·20	7	Jl	28	·26	1	Au	26	·79
																	5	Je	28●	·73								
4572	1528	1393	27M	·6139	23·4150	17·084	**1471**	3	7	Ap	20	·03	1	My	19○	·56	3	Je	18	·09	4	Jl	17	·62	6	Au	16	·16
4573	1529	1394	26M	·8726	12·5233	13·241	**1472**	4	4	Ap	8	·40	5	My	7○	·93	7	Je	6	·46	1	Jl	5	·99	3	Au	4	·52
4574	1530	1395	27M	·1314	1·6316	9·398	**1473**	6	1	Mr	28	·77	3	Ap	27●○	·30	6	Je	25	·36	7	Jl	24	·89	2	Au	23	·42
													4	My	26	·83												
4575	1531	1396	27M	·3901	20·2705	7·532	**1474**	7	7	Ap	16●	·67	2	My	16	·20	3	Je	14	·73	5	Jl	14	·26	6	Au	12	·79
4576	1532	1397	27M	·6489	9·3788	3·689	**1475**	1	5	Ap	6	·03	6	My	5	·56	1	Je	4	·09	2	Jl	3	·62	4	Au	2	·15
4577	1533	1398	26M	·9077	28·0176	1·822	**1476**	2	3	Ap	23	·93	5	My	23	·46	6	Je	21	·99	1	Jl	21	·52	3	Au	20○	·05
4578	1534	1399	27M	·1654	17·1259	25·534	**1477**	4	1	Ap	13	·30	2	My	12	·83	4	Je	11	·36	5	Jl	10	·89	7	Au	9	·42
4579	1535	1400	27M	·4252	6·2342	21·691	**1478**	5	5	Ap	2	·66	7	My	2	·19	1	My	31	·72	3	Je	30○	·25	6	Au	28	·31
																					4	Jl	29●	·78				
4580	1536	1401	27M	·6839	24·8731	19·825	**1479**	6	4	Ap	21	·56	6	My	21	·09	7	Je	19○	·62	2	Jl	19	·15	3	Au	17	·68
4581	1537	1402	26M	·9427	13·9814	15·982	**1480**	7	1	Ap	9	·93	3	My	9	·46	4	Je	7●○	·99	6	Jl	7	·52	1	Au	6	·05
4582	1538	1403	27M	·2014	3·0897	12·139	**1481**	2	6	Mr	30	·30	7	Ap	28	·83	2	My	28	·36	5	Jl	26	·42	6	Au	24	·95
																	3	Je	26	·89								
4583	1539	1404	27M	·4602	21·7286	10·272	**1482**	3	5	Ap	18○	·19	6	My	17	·72	1	Je	16	·25	2	Jl	15	·78	4	Au	14	·31
4584	1540	1405	27M	·7190	10·8369	6·430	**1483**	4	2	Ap	7○	·56	4	My	7	·09	5	Je	5	·62	7	Jl	5	·15	1	Au	3	·68
4585	1541	1406	26M	·9777	29·4758	4·563	**1484**	5	1	Ap	25	·46	2	My	24	·99	4	Je	23	·52	6	Jl	23	·05	7	Au	21	·58
4586	1542	1407	27M	·2365	18·5841	0·720	**1485**	7	5	Ap	14	·83	7	My	14	·36	1	Je	12	·89	3	Jl	12	·42	4	Au	10○	·95
4587	1543	1408	27M	·4952	7·6924	24·432	**1486**	1	3	Ap	4	·19	4	My	3	·72	6	Je	2	·25	7	Jl	1	·78	3	Au	29	·84
																					2	Jl	31○	·31				
4588	1544	1409	27M	·7540	26·3313	22·565	**1487**	2	2	Ap	23	·09	3	My	22	·62	5	Je	21	·15	6	Jl	20●○	·68	1	Au	19	·21
4589	1545	1410	27M	·0127	15·4396	18·722	**1488**	3	6	Ap	11	·46	7	My	10	·99	2	Je	9	·52	4	Jl	9●	·05	5	Au	7	·58
4590	1546	1411	27M	·2715	4·5479	14·880	**1489**	5	3	Mr	31	·82	5	Ap	30	·35	6	My	29○	·88	2	Jl	27	·95	4	Au	26	·47
																	1	Je	28	·41								
4591	1547	1412	27M	·5303	23·1868	13·013	**1490**	6	2	Ap	19	·72	4	My	19○	·25	5	Je	17	·78	7	Jl	17	·31	1	Au	15	·84
4592	1548	1413	27M	·7890	12·2951	9·173	**1491**	7	7	Ap	9	·09	1	My	8●○	·62	3	Je	7	·15	4	Jl	6	·68	6	Au	5	·21
4593	1549	1414	27M	·0478	1·4034	5·327	**1492**	1	4	Mr	28	·46	7	My	26	·52	2	Je	25	·05	3	Jl	24	·58	5	Au	23	·11
									5	Ap	26	·99																
4594	1550	1415	27M	·3065	20·0423	3·461	**1493**	3	3	Ap	16●	·35	4	My	15	·88	6	Je	14	·41	7	Jl	13	·94	2	Au	12	·47
4595	1551	1416	27M	·5653	9·1506	27·173	**1494**	4	7	Ap	5	·72	2	My	5	·25	3	Je	3	·78	5	Jl	3	·31	6	Au	1	·84
																									1	Au	31○	·37
4596	1552	1417	27M	·8240	27·7894	25·306	**1495**	5	6	Ap	24	·62	1	My	24	·15	2	Je	22	·68	4	Jl	22	·21	5	Au	20●	·74
4597	1553	1418	27M	·0828	16·8977	21·463	**1496**	6	3	Ap	12	·98	5	My	12	·52	7	Je	11	·05	1	Jl	10	·58	3	Au	9	·11
4598	1554	1419	27M	·3415	6·0060	17·620	**1497**	1	1	Ap	2	·35	2	My	1	·88	4	My	31	·41	5	Je	29○	·94	2	Au	28	·00
																					7	Jl	29●	·49				
4599	1555	1420	27M	·6003	24·6449	15·754	**1498**	2	7	Ap	21	·25	1	My	20	·78	3	Je	19○	·31	4	Jl	18	·84	6	Au	17	·37
4600	1556	1421	27M	·8591	13·7532	11·911	**1499**	3	4	Ap	10	·62	6	My	10	·15	7	Je	8●	·68	2	Jl	8	·21	3	Au	6	·74
4601	1557	1422	27M	·1178	2·8615	8·068	**1500**	4	1	Mr	29	·98	3	Ap	28○	·51	6	Je	26	·57	1	Jl	26	·10	2	Au	24	·63
													5	My	28●	·04												
4602	1558	1423	27M	·3766	21·5004	6·201	**1501**	6	7	Ap	17○	·88	2	My	17	·41	3	Je	15	·94	5	Jl	15	·47	7	Au	14	·00
4603	1559	1424	27M	·6353	10·6087	2·359	**1502**	7	5	Ap	7●	·24	6	My	6	·77	1	Je	5	·30	2	Jl	4	·84	4	Au	3	·37
4604	1560	1425	27M	·8941	29·2476	0·492	**1503**	1	4	Ap	26	·14	5	My	25	·67	7	Je	24	·20	1	Jl	23	·73	3	Au	22	·26
4605	1561	1426	27M	·1528	18·3559	24·204	**1504**	2	1	Ap	14	·51	3	My	14	·04	4	Je	12	·57	6	Jl	12	·10	7	Au	10○	·63
4606	1562	1427	27M	·4116	7·4642	20·361	**1505**	4	5	Ap	3	·88	7	My	3	·41	1	Je	1	·94	3	Jl	1	·47	6	Au	29	·53
																					5	Jl	31○	·00				

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{324·83647 354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{21·736 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	28	·69	4	O	28	·22	5	N	26	·75	7	D	26	·28	**68**	1	Jr	24○	·81		3	F	23	·34	4	Mr	23	·87
7	S	17	·05	1	O	16	·58	3	N	15	·11	4	D	14	·64	**69**	6	Jr	13○	·17		7	F	11	·70	2	Mr	13	·23
4	S	6	·42	5	O	5	·95	7	N	4	·48	2	D	4	·01	**70**	3	Jr	2○	·54		5	F	1	·07	6	Mr	2	·60
3	S	25	·32	4	O	24	·85	6	N	23	·38	7	D	22	·91	**71**	2	Jr	21	·44		3	F	19	·97	5	Mr	21	·50
7	S	14	·69	2	O	14	·22	3	N	12○	·75	5	D	12	·28	**72**	6	Jr	10	·81		1	F	9	·34	2	Mr	9	·87
5	S	3	·05	6	O	2	·58	1	N	1○	·11	2	N	30	·64		4	D	30	·17	**73**	5	Jr	28	·70	7	F	27	·23
3	S	21	·95	5	O	21○	·48	7	N	20	·01	1	D	19	·54	**74**	3	Jr	18	·07		4	F	16	·60	6	Mr	18	·13
1	S	11	·32	2	O	10●	·85	4	N	9	·38	5	D	8	·91	**75**	7	Jr	7	·44		1	F	5	·97	3	Mr	7○	·50
{5	Au	31○	·68	1	O	29	·74	3	N	28	·27	4	D	27	·81		**Magha**				**76**	{6	Jr*	26	·33	2	Mr	25	·39
{7	S	30●	·21														**Kshaya**					{7	F	24●○	·86				
4	S	18	·58	6	O	18	·11	7	N	16	·64	2	D	16	·17	**77**	3	Jr	15	·70		5	F	13	·23	6	Mr	14	·76
1	S	7	·95	3	O	7	·48	5	N	6	·01	6	D	5	·54	**78**	1	Jr	4	·07		2	F	2	·60	4	Mr	4	·13
7	S	26	·84	2	O	26	·37	3	N	24	·90	5	D	24○	·43	**79**	6	Jr	22	·96		1	F	21	·49	3	Mr	23	·02
5	S	16	·21	6	O	15	·74	1	N	14	·27	2	D	13●○	·80	**80**	4	Jr	12	·33		5	F	10	·86	7	Mr	11	·39
2	S	4	·58	4	O	4	·11	5	N	2	·64	7	D	2	·17		1	D	31	·70	**81**	3	Jr	30	·23	4	F	28	·76
1	S	23	·48	3	O	23	·01	4	N	21●	·54	6	D	21	·07	**82**	7	Jr	19	·60		2	F	18	·13	3	Mr	19	·66
5	S	12	·85	7	O	12○	·38	1	N	10●	·91	3	D	10	·44	**83**	4	Jr	8	·97		6	F	7	·50	1	Mr	6	·03
3	S	2	·21	4	O	1○	·74	6	O	31	·27	7	N	29	·80		2	D	29	·33	**84**	3	Jr	27	·86	{5	F	26	·39
																										{6	Mr	26	·92
2	S	20●○	·11	3	O	19	·64	5	N	18	·17	6	D	17	·70	**85**	1	Jr	16	·23		2	F	14	·76	4	Mr	16	·29
6	S	9●	·48	1	O	9	·01	2	N	7	·54	4	D	7	·07	**86**	5	Jr	5	·60		7	F	4○	·13	1	Mr	5●	·66
5	S	28	·37	6	O	27	·90	1	N	26	·43	2	D	25	·96	**87**	4	Jr	24○	·49		6	F	23	·02	7	Mr	24	·55
2	S	17	·74	4	O	17	·27	5	N	15	·80	7	D	15	·33	**88**	1	Jr	13○	·86		3	F	12	·39	4	Mr	12	·92
7	S	6	·11	1	O	5	·64	3	N	4	·17	4	D	3	·70	**89**	6	Jr	2	·23		7	Jr	31	·76	2	Mr	2	·29
6	S	25	·00	7	O	24	·53	2	N	23○	·06	3	D	22●	·59	**90**	5	Jr	21	·12		6	F	19	·65	1	Mr	21	·19
3	S	14	·37	4	O	13	·90	6	N	12○	·43	7	D	11	·96	**91**	2	Jr	10	·49		4	F	9	·02	5	Mr	10	·55
7	S	3	·74	2	O	3	·27	3	N	1●○	·80	5	D	1	·33		6	D	30	·86	**92**	1	Jr	29	·39	2	F	27	·92
6	S	21	·64	1	O	21●	·17	2	N	19	·70	4	D	19	·23	**93**	5	Jr	17	·76		7	F	16	·29	1	Mr	17○	·82
4	S	11○	·00	5	O	10	·53	7	N	9	·06	1	D	8	·59	**94**	3	Jr	7	·12		4	F	5	·65	6	Mr	7○	·18
2	S	29	·90	4	O	29	·43	5	N	27	·96	7	D	27	·49	**95**	2	Jr	26	·03		3	F	24●	·56	5	Mr	26	·09
7	S	19	·27	1	O	18	·80	3	N	17	·33	4	D	16	·86	**96**	6	Jr	15○	·39		7	F	13●	·92	2	Mr	14	·45
4	S	7	·64	6	O	7	·17	7	N	5	·70	2	D	5	·23	**97**	3	Jr	3○	·76		5	F	2	·29	6	Mr	3	·82
3	S	26	·54	5	O	26	·07	6	N	24	·60	1	D	24○	·13	**98**	2	Jr	22	·66		4	F	21	·19	5	Mr	22	·72
7	S	15	·90	2	O	15	·43	3	N	13	·96	5	D	13●	·49	**99**	7	Jr	12	·02		1	F	10	·55	3	Mr	12	·09
5	S	5	·27	6	O	4	·80	1	N	3	·33	2	D	2	·86	**15**	4	Jr	1	·39	**00**	5	Jr	30	·92	7	F	29	·45
4	S	23	·16	5	O	22○	·69	7	N	21	·22	1	D	20	·75	**01**	3	Jr	19	·28		4	F	17	·81	6	Mr	19	·34
1	S	12	·53	3	O	12●○	·06	4	N	10	·59	6	D	10	·12	**02**	7	Jr	8	·65		2	F	7	·18	3	Mr	8	·71
5	S	1	·89	7	O	1●○	·42	1	O	30	·95	3	N	29	·48		5	D	29	·01	**03**	6	Jr	27	·54	{1	F	26	·07
																										{2	Mr	27●	·61
4	S	20●	·79	6	O	20	·32	7	N	18	·85	2	D	18	·38	**04**	3	Jr	16	·91		5	F	15○	·44	6	Mr	15	·97
2	S	9	·16	3	O	8	·69	5	N	7	·22	6	D	6	·75	**05**	1	Jr	5	·28		2	F	3○	·81	4	Mr	5	·34
1	S	28	·06	2	O	27	·59	4	N	26	·12	5	D	25	·65	**06**	7	Jr	24●○	·18		1	F	22	·71	3	Mr	24	·24

TABLE X—

									⊙'s Anom., col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom. col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A. D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4607	1563	1428	27M	·6704	26·1031	18·494	**1506**	5	4	Ap	22	·77	6	My	22	·30	7	Je	20	·83	2	Jl	20●	·36	3	Au	18	·90
4608	1564	1429	27M	·9291	15·2114	14·651	**1507**	6	2	Ap	12	·14	3	My	11	·67	5	Je	10○	·20	6	Jl	9●	·73	1	Au	8	·26
4609	1565	1430	27M	·1879	4·3197	10·809	**1508**	7	6	Mr	31	·51	1	Ap	30	·04	{ 2	My	29○	·57	5	Jl	27	·63	7	Au	26	·16
																	{ 4	Je	28	·10								
4610	1566	1431	27M	·4466	22·9586	8·942	**1509**	2	5	Ap	19	·40	6	My	18○	·94	1	Je	17	·47	3	Jl	17	·00	4	Au	15	·53
4611	1567	1432	27M	·7054	12·0669	5·099	**1510**	3	2	Ap	8	·77	4	My	8●	·30	5	Je	6	·83	7	Jl	6	·36	1	Au	4	·89
4612	1568	1433	27M	·9641	1·1752	1·256	**1511**	4	{ 7	Mr	29○	·14	3	My	27	·20	4	Je	25	·73	6	Jl	25	·26	7	Au	23	·79
									{ 1	Ap	27	·67																
4613	1569	1434	27M	·2229	19·8141	26·944	**1512**	5	6	Ap	16	·04	7	My	15	·57	2	Je	14	·10	3	Jl	13	·63	5	Au	12	·16
4614	1570	1435	27M	·4816	8·9224	23·101	**1513**	7	3	Ap	5	·40	4	My	4	·93	6	Je	3	·46	1	Jl	3	·00	{ 2	Au	1	·53
																									{ 4	Au	31○	·06
4615	1571	1436	27M	·7404	27·5612	21·235	**1514**	1	2	Ap	24	·30	3	My	23	·83	5	Je	22	·36	6	Jl	21	·89	1	Au	20●	·42
4616	1572	1437	27M	·9992	16·6695	17·392	**1515**	2	6	Ap	13	·67	1	My	13	·20	2	Je	11	·73	4	Jl	11○	·26	5	Au	9	·79
4617	1573	1438	27M	·2579	5·7778	13·549	**1516**	3	4	Ap	2	·04	5	My	1	·57	7	My	31	·10	{ 1	Je	29○	·63	4	Au	27	·69
																					{ 3	Jl	29	·16				
4618	1574	1439	27M	·5167	24·4167	11·682	**1517**	5	2	Ap	20	·93	4	My	20	·46	5	Je	18●	·99	7	Jl	18	·52	2	Au	17	·06
4619	1575	1440	27M	·7754	13·5250	7·840	**1518**	6	7	Ap	10	·30	1	My	9○	·82	3	Je	8●	·36	4	Jl	7	·89	6	Au	6	·42
4620	1576	1441	27M	·0342	2·6333	3·997	**1519**	7	4	Mr	30	·67	{ 6	Ap	29○	·20	2	Je	27	·26	3	Jl	26	·79	5	Au	25	·32
													{ 7	My	28	·73												
4621	1577	1442	27M	·2929	21·2722	2·130	**1520**	1	3	Ap	17○	·56	5	My	17	·10	6	Je	15	·63	1	Jl	15	·16	2	Au	13	·69
4622	1578	1443	27M	·5517	10·3805	25·842	**1521**	3	7	Ap	6●	·93	2	My	6	·46	3	Je	4	·99	5	Jl	4	·52	7	Au	3	·05
4623	1579	1444	27M	·8105	29·0194	23·975	**1522**	4	{ 5	Mr	27	·30	1	My	25	·36	2	Je	20	·89	4	Jl	23	·42	5	Au	21○	·95
									{ 6	Ap	25	·83																
4624	1580	1445	27M	·0692	18·1277	20·133	**1523**	5	4	Ap	15	·20	5	My	14	·73	7	Je	13	·26	1	Jl	12	·79	3	Au	11●○	·32
4625	1581	1446	27M	·3280	7·2360	16·290	**1524**	6	1	Ap	3	·56	3	My	3	·09	4	Je	1	·62	6	Jl	1	·16	{ 7	Jl	30	69
																									{ 2	Au	29	·22
4626	1582	1447	27M	·5867	25·8749	14·423	**1525**	1	7	Ap	22	·46	2	My	22	·00	3	Je	20○	·52	5	Jl	20	·05	6	Au	18	·58
4627	1583	1448	27M	·8455	14·9832	10·580	**1526**	2	4	Ap	11	·83	6	My	11	·36	7	Je	9○	·89	2	Jl	9	·42	3	Au	7	·95
4628	1584	1449	28M	·1042	4·0915	6·738	**1527**	3	2	Ap	1	·20	3	Ap	30	·73	{ 5	My	30●○	·26	1	Jl	28	·32	2	Au	26	·85
																	{ 6	Je	28	·79								
4629	1585	1450	27M	·3630	22·7304	4·871	**1528**	4	1	Ap	19	·09	2	My	18●	·62	4	Je	17	·15	5	Jl	16	·68	7	Au	15	·22
4630	1586	1451	27M	·6218	11·8387	1·028	**1529**	6	5	Ap	8○	·46	6	My	7	·99	1	Je	6	·52	3	Jl	6	·05	4	Au	4	·58
4631	1587	1452	27M	·8805	0·9470	24·740	**1530**	7	{ 2	Mr	28●○	·83	5	My	26	·89	7	Je	25	·42	1	Jl	24	·95	3	Au	23	·48
									{ 4	Ap	27	·36																
4632	1588	1453	28M	·1393	19·5858	22·873	**1531**	1	1	Ap	16	·72	3	My	16	·26	4	Je	14	·79	6	Jl	14	·32	7	Au	12	·85
4633	1589	1454	27M	·3980	8·6941	19·030	**1532**	2	6	Ap	5	·09	7	My	4	·62	2	Je	3	·15	3	Jl	2	·68	{ 5	Au	1	·21
																									{ 6	Au	30●	·74
4634	1590	1455	27M	·6568	27·3330	17·165	**1533**	4	4	Ap	22	·99	6	My	23	·52	1	Je	22	·05	2	Jl	21○	·58	4	Au	20●	·11
4635	1591	1456	27M	·9155	16·4413	13·321	**1534**	5	2	Ap	13	·36	3	My	12	·89	5	Je	11	·42	6	Jl	10○	·95	1	Au	9	·48
4636	1592	1457	28M	·1743	5·5496	9·478	**1535**	6	6	Ap	2	·72	1	My	2	·25	2	My	31	·78	{ 4	Jl	30●	·32	7	Au	28	·38
																					{ 5	Jl	29	·85				
4637	1593	1458	27M	·4330	24·1885	7·611	**1536**	7	5	Ap	20	·62	7	My	20○	·15	1	Je	18	·68	3	Jl	18●	·21	4	Au	16	·74
4638	1594	1459	27M	·6918	13·2968	3·769	**1537**	2	2	Ap	9	·99	4	My	9○	·52	6	Je	8	·05	7	Jl	7	·58	2	Au	6	·11
4639	1595	1460	27M	·9506	2·4057	27·481	**1538**	3	7	Mr	30	·36	{ 1	Ap	28○	·89	4	Je	26	·95	6	Jl	26	·48	1	Au	25	·01
													{ 3	My	28	·42												
4640	1596	1461	28M	·2093	21·0440	25·614	**1539**	4	6	Ap	18	·25	7	My	17	·78	2	Je	16	·31	3	Jl	15	·84	5	Au	14	·38
4641	1597	1462	27M	·4681	10·1523	21·771	**1540**	5	3	Ap	6●	·62	5	My	6	·15	6	Je	4	·68	1	Jl	4	·21	2	Au	2	·74
4642	1598	1463	27M	·7268	28·7912	19·904	**1541**	7	2	Ap	25	·52	4	My	25	·05	5	Je	23	·58	7	Jl	23	·11	1	Au	21●○	·64
4643	1599	1464	27M	·9856	17·8995	16·062	**1542**	1	6	Ap	14	·88	1	My	14	·42	2	Je	12	·95	4	Jl	12	·48	6	Au	11●	·01
4644	1600	1465	28M	·2443	7·0078	12·219	**1543**	2	4	Ap	4	·25	5	My	3	·78	7	Je	2	·31	{ 1	Jl	1○	·84	4	Au	29	·90
																					{ 3	Jl	31	·37				

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+ 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	17	·43	6	O	16	·96	1	N	15	·49	3	D	15	·02	**07**	4	Jr	13●	·55		6	F	12	·08	7	Mr	13	·61
2	S	6	·79	4	O	6	·32	5	N	4	·85	7	D	4ↄ	·38	**08**	1	Jr	2	·92		3	F	1	·45	4	Mr	1	·98
1	S	24	·69	3	O	24	·22	4	N	22ↄ	·75	6	D	22	·28	**09**	7	Jr	20	·81		2	F	19	·34	3	Mr	20	·87
6	S	14	·06	7	O	13	·59	2	N	12●ↄ	·12	3	D	11	·65	**10**	5	Jr	10	·18		6	F	8	·71	1	Mr	10	·24
3	S	3	·42	4	O	2	·96	6	N	1	·49	1	D	1	·02		2	D	30	·55	**11**	4	Jr	29	·08	5	F	27	·61
2	S	22ↄ	·32	3	O	21	·85	5	N	20	·38	6	D	19	·91	**12**	1	Jr	18	·44		2	F	16	·98	4	Mr	17○	·51
6	S	10ↄ	·69	1	O	10	·22	2	N	8	·75	4	D	8	·28	**13**	5	Jr	6	·81		7	F	5	·34	1	Mr	6●○	·87
5	S	29	·59	7	O	29	·12	1	N	27	·65	3	D	27	·18	**14**	4	Jr	25ↄ	·71		6	F	24	·24	7	Mr	25	·77
2	S	18	·95	4	O	18	·48	6	N	17	·02	7	D	16	·55	**15**	2	Jr	15ↄ	·08		3	F	13	·61	5	Mr	15	·14
7	S	8	·32	1	O	7	·85	3	N	6	·38	4	D	5	·91	**16**	6	Jr	4●ↄ	·44		7	F	2	·97	2	Mr	3	·50
6	S	26	·22	7	O	25	·75	2	N	24	·28	3	D	23	·81	**17**	5	Jr	22	·34		6	F	20	·87	1	Mr	22	·40
3	S	15	·57	5	O	15	·12	6	N	13	·65	1	D	13●	·18	**18**	2	Jr	11	·71		4	F	10	·24	5	Mr	11	·77
7	S	4	·95	2	O	4	·48	4	N	3ↄ	·01	5	D	2	·54	**19**	7	Jr	1	·08		1	Jr	30	·61	3	Mr	1	·14
6	S	23	·85	1	O	23ↄ	·38	2	N	21	·91	4	D	21	·44	**20**	5	Jr	19	·97		7	F	18	·50	2	Mr	19	·03
4	S	12	·22	5	O	11ↄ	·75	7	N	10	·28	1	D	9	·81	**21**	3	Jr	8	·34		4	F	6	·87	6	Mr	8	·40
1	S	1	·58	3	O	1	·12	**Margasira Kshaya**				6	N	29	·18		7	D	28	·71	**22**	2	Jr	27	·24	3	F	25ↄ	·77
				4	O	30	·65																						
7	S	20	·48	2	O	20	·01	3	N	18	·54	5	D	18	·07	**23**	6	Jr	16	·60		1	F	15ↄ	·14	2	Mr	16	·67
4	S	9	·85	6	O	9	·38	7	N	7	·91	2	D	7	·44	**24**	3	Jr	5	·97		5	F	4○	·50	7	Mr	5	·03
3	S	27	·75	5	O	27	·28	6	N	25	·81	1	D	25	·34	**25**	2	Jr	23	·87		4	F	22	·40	5	Mr	23	·93
1	S	17	·11	2	O	16	·64	4	N	15	·18	5	D	14ↄ	·71	**26**	7	Jr	13●	·24		1	F	11	·77	3	Mr	13	·30
5	S	6	·48	7	O	6	·01	1	N	4	·54	3	D	4○	·07	**27**	4	Jr	2	·60		6	F	1	·13	7	Mr	2	·66
4	S	25	·38	5	O	24	·91	7	N	23○	·44	1	D	22	·97	**28**	3	Jr	21	·50		5	F	20	·03	6	Mr	20	·56
1	S	13	·75	3	O	13	·28	4	N	11●	·81	6	D	11	·34	**29**	7	Jr	9	·87		2	F	8	·40	3	Mr	9	·93
6	S	3	·11	7	O	2○	·64	2	N	1●	·17	3	N	30	·70		5	D	30	·24	**30**	6	Jr	28	·77	1	F	27	·30
5	S	22ↄ	·01	6	O	21	·54	1	N	20	·07	2	D	19	·60	**31**	4	Jr	18	·13		5	F	16	·66	7	Mr	18○	·19
2	S	11ↄ	·38	3	O	10	·91	5	N	9	·44	6	D	8	·97	**32**	1	Jr	7	·50		3	F	6	·03	4	Mr	6	·56
1	S	29	·28	2	O	28	·81	4	N	27	·34	5	D	26	·87	**33**	7	Jr	25○	·40		1	F	23	·93	3	Mr	25	·46
5	S	18	·64	7	O	18	·17	1	N	16	·70	3	D	16	·23	**34**	4	Jr	14○	·76		6	F	13	·30	7	Mr	14	·83
3	S	8	·01	4	O	7	·54	6	N	6	·07	7	D	5	·60	**35**	2	Jr	4	·13		3	F	2	·66	5	Mr	4	·19
1	S	26	·91	3	O	26	·44	4	N	24	·97	6	D	24	·50	**36**	1	Jr	23	·03		2	F	21	·56	4	Mr	22	·09
6	S	15	·27	7	O	14	·80	2	N	13ↄ	·34	3	D	12	·87	**37**	5	Jr	11	·40		6	F	9	·93	1	Mr	11	·46
3	S	4	·64	5	O	4	·17	6	N	2○	·70	1	D	2	·23		2	D	31	·76	**38**	4	Jr	30	·29	5	F	28	·82
2	S	23	·54	4	O	23ↄ	·07	5	N	21	·60	7	D	21	·13	**39**	1	Jr	19	·66		3	F	18	·19	4	Mr	19	·72
6	S	12	·91	1	O	12●	·44	2	N	10	·97	4	D	10	·50	**40**	6	Jr	9	·03		7	F	7	·56	2	Mr	8○	·09
4	S	1○	·27	7	O	30	·33	1	N	28	·86	**Pausha Kshaya**					3	D	28	·40	**41**	4	Jr	26	·93	6	F	25ↄ	·46
5	S	30	·80																							7	Mr	26	·99
3	S	20	·17	4	O	19	·70	6	N	18	·23	7	D	17	·76	**42**	2	Jr	16	·29		3	F	14○	·82	5	Mr	16	·35
7	S	9	·54	2	O	9	·07	3	N	7	·60	5	D	7	·13	**43**	6	Jr	5	·66		1	F	4	·19	2	Mr	5	·72
6	S	28	·44	7	O	27	·97	2	N	26	·50	4	D	26ↄ	·03	**44**	5	Jr	24●	·56		7	F	23	·09	1	Mr	23	·62

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A. D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4645	1601	1466	27M	·5031	25·6467	10·352	**1544**	3	3	Ap	22	·15	4	My	21	·68	6	Je	20○	·21	7	Jl	19	·74	2	Au	18	·27
4646	1602	1467	27M	·7619	14·7550	6·509	**1545**	5	7	Ap	11	·52	2	My	11	·05	3	Je	9●○	·58	5	Jl	9	·11	6	Au	7	·64
4647	1603	1468	28M	·0206	3·8633	2·667	**1546**	6	4	Mr	31	·88	6	Ap	30	·41	7	My	29	·94	4	Jl	28	·01	5	Au	26	·54
																	2	Je	28	·47								
4648	1604	1469	28M	·2794	22·5022	0·800	**1547**	7	3	Ap	19○	·78	5	My	19●	·31	6	Je	17	·84	1	Jl	17	·37	2	Au	15	·90
4649	1605	1470	27M	·5381	11·6105	24·512	**1548**	1	1	Ap	8○	·15	2	My	7	·68	4	Je	6	·21	5	Jl	5	·74	7	Au	4	·27
4650	1606	1471	27M	·7969	0·7188	20·669	**1549**	3	5	Mr	28●○	·52	1	My	26	·58	3	Je	26	·11	4	Jl	24	·64	6	Au	23	·17
									7	Ap	27	·05																
4651	1607	1472	28M	·0556	19·3576	18·802	**1550**	4	4	Ap	16	·41	5	My	15	·94	7	Je	14	·47	2	Jl	14	·00	3	Au	12	·54
4652	1608	1473	28M	·3144	8·4659	14·959	**1551**	5	1	Ap	5	·78	3	My	5	·31	4	Je	3	·84	6	Jl	3	·37	7	Au	1○	·90
																									2	Au	31●	·43
4653	1609	1474	27M	·5732	27·1048	13·093	**1552**	6	7	Ap	23	·68	2	My	23	·21	3	Je	21	·74	5	Jl	21○	·27	6	Au	19	·80
4654	1610	1475	27M	·8319	16·2131	9·250	**1553**	1	5	Ap	13	·04	6	My	12	·58	1	Je	11	·11	2	Jl	10	·64	4	Au	9	·17
4655	1611	1476	28M	·0907	5·3214	5·407	**1554**	2	1	Ap	2	·41	3	My	1	·94	5	My	31○	·47	1	Jl	29	·54	3	Au	28	·07
																	7	Je	30	·00								
4656	1612	1477	28M	·3494	23·9603	3·540	**1555**	3	1	Ap	21	·31	2	My	20○	·84	4	Je	19●	·37	5	Jl	18	·90	7	Au	17	·43
4657	1613	1478	27M	·6082	13·0686	27·253	**1556**	4	5	Ap	9	·68	7	My	9●○	·21	1	Je	7	·74	3	Jl	7	·27	4	Au	5	·80
4658	1614	1479	27M	·8669	2·1769	23·410	**1557**	6	3	Mr	30	·04	4	Ap	28	·57	7	Je	26	·64	2	Jl	26	·17	3	Au	28	·70
													6	My	28	·10												
4659	1615	1480	28M	·1257	20·8158	21·543	**1558**	7	1	Ap	17●	·94	3	My	17	·47	5	Je	16	·00	6	Jl	15	·53	1	Au	14	·06
4660	1616	1481	28M	·3844	9·9241	17·700	**1559**	1	6	Ap	7	·31	7	My	6	·84	2	Je	5	·37	3	Jl	4	·90	5	Au	3	·43
4661	1617	1482	27M	·6432	28·5630	15·833	**1560**	2	5	Ap	25	·21	6	My	24	·74	1	Je	23	·27	2	Jl	22	·80	4	Au	21●○	·33
4662	1618	1483	27M	·9020	17·6713	11·991	**1561**	4	2	Ap	14	·57	4	My	14	·10	5	Je	12	·63	7	Jl	12	·16	1	Au	10●	·70
4663	1619	1484	28M	·1607	6·7796	8·148	**1562**	5	6	Ap	3	·94	1	My	3	·47	3	Je	2	·00	4	Jl	1○	·53	7	Au	29	·59
																					6	Jl	31	·06				
4664	1620	1485	28M	·4195	25·4185	6·281	**1563**	6	5	Ap	22	·84	7	My	22	·37	1	Je	20○	·90	3	Jl	20	·43	4	Au	18	·96
4665	1621	1486	27M	·6782	14·5268	2·438	**1564**	7	3	Ap	11	·20	4	My	10	·73	6	Je	9●	·27	7	Jl	8	·80	2	Au	7	·33
4666	1622	1487	27M	·9370	3·6351	26·150	**1565**	2	7	Mr	31	·57	2	Ap	30○	·10	3	My	29	·63	6	Jl	27	·69	1	Au	26	·22
																	5	Je	28	·16								
4667	1623	1488	28M	·1957	22·2740	24·283	**1566**	3	6	Ap	19○	·47	1	My	19	·00	2	Je	17	·53	4	Jl	17	·06	5	Au	15	·59
4668	1624	1489	28M	·4545	11·3822	20·440	**1567**	4	3	Ap	8●○	·84	5	My	8	·37	6	Je	6	·90	1	Jl	6	·43	2	Au	4	·96
4669	1625	1490	27M	·7133	0·4905	16·598	**1568**	5	1	Mr	28	·20	4	My	26	·26	5	Je	24	·79	7	Jl	24	·33	1	Au	22	·86
									2	Ap	26	·73																
4670	1626	1491	27M	·9720	19·1294	14·731	**1569**	7	7	Ap	16	·10	1	My	15	·63	3	Je	14	·16	4	Jl	13	·69	6	Au	12○	·22
4671	1627	1492	28M	·2308	8·2377	10·888	**1570**	1	4	Ap	5	·47	6	My	5	·00	7	Je	3	·53	2	Jl	3	·06	3	Au	1○	·59
																									5	Au	31	·12
4672	1628	1493	28M	·4895	26·8766	9·022	**1571**	2	3	Ap	24	·37	4	My	23	·90	6	Je	22	·43	7	Jl	21●○	·96	2	Au	20	·49
4673	1629	1494	27M	·7483	15·9849	5·179	**1572**	3	7	Ap	12	·73	2	My	12	·26	3	Je	10○	·79	5	Jl	10●	·32	6	Au	8	·85
4674	1630	1495	28M	·0070	5·0932	1·336	**1573**	5	5	Ap	2	·10	6	My	1	·63	1	My	31○	·16	4	Jl	29	·22	5	Au	27	·75
																	2	Je	29	·69								
4675	1631	1496	28M	·2658	23·7321	27·024	**1574**	6	4	Ap	21	·00	5	My	20○	·53	7	Je	19	·06	1	Jl	18	·59	3	Au	17	·12
4676	1632	1497	28M	·5246	12·8404	23·181	**1575**	7	1	Ap	10	·36	2	My	9●	·89	4	Je	8	·42	5	Jl	7	·95	7	Au	6	·48
4677	1633	1498	27M	·7833	1·9487	19·339	**1576**	1	5	Mr	29○	·73	7	Ap	28	·26	3	Je	26	·32	4	Jl	25	·85	6	Au	24	·38
													1	My	27	·79												
4678	1634	1499	28M	·0421	20·5876	17·472	**1577**	3	4	Ap	17	·63	6	My	17	·16	7	Je	15	·69	2	Jl	15	·22	3	Au	13	·75
4679	1635	1500	28M	·3008	9·6959	13·629	**1578**	4	2	Ap	7	·00	3	My	6	·53	5	Je	5	·06	6	Jl	4	·59	1	Au	3	·12
4680	1636	1501	28M	·5596	28·3348	11·762	**1579**	5	7	Ap	25	·89	2	My	25	·42	3	Je	23	·95	5	Jl	23	·49	7	Au	22●	·02
4681	1637	1502	27M	·8183	17·4431	7·919	**1580**	6	5	Ap	14	·26	6	My	13	·79	1	Je	12	·32	2	Jl	11○	·85	4	Au	10	·38
4682	1638	1503	28M	·0771	6·5514	4·077	**1581**	1	2	Ap	3	·63	4	My	3	·16	5	Je	1	·69	7	Jl	1○	·22	3	Au	29	·28
																					1	Jl	30	·75				
4683	1639	1504	28M	·3368	25·1903	2·210	**1582**	2	1	Ap	22	·53	3	My	22	·06	4	Je	20●	·59	6	Jl	20	·12	7	Au	18	·65

Surya Siddhanta.

	Asvina				Kartika				Margasira				Pausha				A.D.
	+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470				
	+ 9·880				+ 11·856				+ 13·832				+ 15·808				
	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	
	3	S	16	·80	5	O	16	·33	6	N	14	·86	1	D	14☽	·39	45
	1	S	6	·17	2	O	5	·70	4	N	4	·23	5	D	3●☽	·76	46
	7	S	25	·07	1	O	24	·60	3	N	23●	·13	4	D	22	·66	47
	4	S	14	·43	5	O	13☽	·96	7	N	12	·49	2	D	12	·02	48
	1	S	2	·80	3	O	2☽	·33	4	O	31	·86	6	N	30	·39	
	7	S	21●☽	·70	2	O	31	·23	3	N	19	·76	5	D	19	·29	50
	5	S	11	·07	6	O	10	·60	1	N	9	·13	2	D	8	·66	51
	3	S	29	·96	5	O	29	·49	7	N	28	·02	1	D	27	·55	52
	1	S	18	·33	2	O	17	·86	4	N	16	·39	5	D	15	·92	53
	5	S	7	·70	7	O	7	·23	1	N	5	·76	3	D	5	·29	54
	4	S	26	·60	6	O	26	·13	7	N	24☽	·66	2	D	24	·19	55
	1	S	15	·96	3	O	15	·49	5	N	14●☽	·02	6	D	13	·55	56
	6	S	4	·33	7	O	3	·86	2	N	2●☽	·39	3	D	1	·92	
	5	S	23	·22	6	O	22●	·76	1	N	21	·29	2	D	20	·82	58
	2	S	12☽	·59	4	O	12	·12	5	N	10	·65	7	D	10	·18	59
{	6	S	1☽	·96	3	O	31	·02	4	N	29	·55	6	D	29	·08	60
{	1	O	1	·49													
	5	S	19	·86	7	O	19	·39	1	N	17	·92	3	D	17	·45	61
	3	S	9	·22	4	O	8	·75	6	N	7	·28	7	D	6	·81	62
	2	S	28	·12	3	O	27	·65	5	N	26	·18	6	D	25☽	·71	63
	6	S	17	·49	1	O	17	·02	2	N	15	·55	4	D	15●☽	·08	64
	3	S	5	·86	5	O	5	·39	6	N	3	·92	1	D	3	·45	65
	2	S	24	·75	4	O	24☽	·28	5	N	22	·81	7	D	22	·34	66
	7	S	14	·12	1	O	13☽	·65	3	N	12	·18	4	D	11	·71	67
	4	S	3	·49	6	O	3☽	·02	7	N	1	·55	2	D	1	·08	
	3	S	21●	·38	4	O	20	·91	6	N	19	·44	7	D	18	·97	69
	7	S	10	·75	2	O	10	·28	3	N	8	·81	5	D	8	·34	70
	6	S	29	·65	1	O	29	·18	2	N	27	·71	4	D	27	·24	71
	4	S	19	·02	5	O	18	·55	7	N	17	·08	1	D	16	·61	72
	1	S	7	·38	2	O	6	·91	4	N	5	·44	5	D	4☽	·97	73
	7	S	26	·28	1	O	25	·81	3	N	24☽	·34	4	D	23	·87	74
	4	S	15	·65	6	O	15	·18	7	N	13☽	·71	2	D	13	·24	75
	2	S	5	·01	3	O	4	·54	5	N	3	·07	6	D	2	·60	76
	7	S	22☽	·91	2	O	22	·44	3	N	20	·97	5	D	20	·50	77
	5	S	12☽	·28	6	O	11	·81	1	N	10	·34	2	D	9	·87	78
{	2	S	1☽	·65	5	O	30	·71	7	N	29	·24	1	D	28	·77	79
{	4	O	1	·18													
	1	S	20	·54	3	O	20	·07	4	N	18	·61	6	D	18	·13	80
	5	S	8	·91	7	O	8	·44	1	N	6	·97	3	D	6	·50	81
	4	S	27	·81	6	O	27	·34	7	N	25	·87	2	D	25☽	·40	82
	2	S	17	·18	3	O	16	·71	5	N	15	·24	6	D	14●	·77	83

A.D.	Magha				A.D.	Phalguna				Chaitra			
	+ 265·77529					+ 295·30588				{ +324·83647 { +354·36705			
	+ 17·784					+ 19·760				{ + 21·736 { + 23·712			
	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
45	2	Jr	12	·92		4	F	11	·45	5	Mr	12	·98
46	7	Jr	2	·29		1	Jr	31	·82	3	Mr	2	·35
47	6	Jr	21	·19		7	F	19	·72	2	Mr	21	·25
48	3	Jr	10	·55		5	F	9	·08	6	Mr	9	·62
	7	D	29	·92	49	2	Jr	28	·45	3	F	26	·98
50	6	Jr	17	·82		1	F	16	·35	2	Mr	17●	·88
51	4	Jr	7	·19		5	F	5☽	·72	7	Mr	7	·25
52	3	Jr	26☽	·08		4	F	24	·61	6	Mr	25	·14
53	7	Jr	14●	·45		1	F	12	·98	3	Mr	14	·51
54	4	Jr	3	·82		6	F	2	·35	7	Mr	3	·88
55	3	Jr	22	·72		5	F	21	·25	6	Mr	22	·78
56	1	Jr	12	·08		2	F	10	·61	4	Mr	11	·14
	5	D	31	·45	57	6	Jr	29	·98	1	F	28	·51
58	4	Jr	19	·35		5	F	17	·88	7	Mr	19☽	·41
59	1	Jr	8	·71		3	F	7	·24	4	Mr	8☽	·77
60	7	Jr	27	·61		2	F	26●☽	·14	3	Mr	26	·67
61	4	Jr	15	·98		6	F	14●	·51	1	Mr	16	·04
62	2	Jr	5☽	·34		3	F	3	·87	5	Mr	5	·40
63	1	Jr	24	·24		2	F	22	·77	4	Mr	24	·30
64	5	Jr	13	·61		7	F	12	·14	1	Mr	12	·67
65	2	Jr	1	·98		4	Jr	31	·51	6	Mr	2	·04
66	1	Jr	20	·87		3	F	19	·40	4	Mr	20	·93
67	6	Jr	10	·24		7	F	8	·77	2	Mr	10	·30
	3	D	30	·61	68	5	Jr	29	·14	6	F	27	·67
69	2	Jr	17	·50		4	F	16☽	·03	5	Mr	17	·56
70	6	Jr	6	·87		1	F	5●☽	·40	2	Mr	6	·93
71	5	Jr	25	·77		7	F	24	·30	1	Mr	25	·83
72	3	Jr	15●	·14		4	F	13	·67	6	Mr	14	·20
73	7	Jr	3	·50		2	F	2	·03	3	Mr	3	·56
74	6	Jr	22	·40		7	F	20	·93	2	Mr	22	·46
75	3	Jr	11	·77		5	F	10	·30	6	Mr	11	·83
76	1	Jr	1	·13		2	Jr	30	·66	4	F	29	·19
77	7	Jr	19	·03		1	F	17	·56	3	Mr	19☽	·09
78	4	Jr	8	·40		5	F	5	·93	7	Mr	8●☽	·46
79	3	Jr	27	·30		4	F	25	·83	6	Mr	27	·36
80	7	Jr	16☽	·66		2	F	15●	·19	3	Mr	15	·72
81	5	Jr	5☽	·03		6	F	3	·56	1	Mr	5	·09
82	3	Jr	23	·93		5	F	22	·46	6	Mr	23	·99
83	1	Jr	13	·30		2	F	11	·83	4	Mr	13	·36

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year.		First New-Moon in Solar Year.	Anomaly of first New-Moon.	A. D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Month and day A. D.	Fraction of day.					Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4684	1640	1505	28M	·5946	14·2986	25·922	**1583**	3	5	Ap	11	·89	7	My	11○	·42	1	Je	9	·95	3	Jl	9	·48	5	Au	8	·02
4685	1641	1506	27M	·8534	3·4069	22·079	**1584**	4	3	Mr	31	·26	4	Ap	29○	·79	6	My	29	·32	2	Jl	27	·38	3	Au	25	·91
																	7	Je	27	·85								
4686	1642	1507	28M	·1121	22·0457	20·212	**1585**	6	2	Ap	19ↄ	·16	3	My	18	·69	5	Je	17	·22	6	Jl	16	·75	1	Au	15	·28
4687	1643	1508	28M	·3709	11·1540	16·370	**1586**	7	6	Ap	8	·52	1	My	8	·05	2	Je	6	·59	4	Jl	6	·12	5	Au	4	·65
4688	1644	1509	28M	·6296	0·2623	12·527	**1587**	1	3	Mr	28	·89	6	My	26	·95	1	Je	25	·48	3	Jl	25	·01	4	Au	23ↄ	·54
									5	Ap	27	·42																
4689	1645	1510	27M	·8884	18·9012	10·660	**1588**	2	2	Ap	15	·79	4	My	15	·32	5	Je	13	·85	7	Jl	13	·38	1	Au	11ↄ	·91
4690	1646	1511	28M	·1471	8·0095	6·817	**1589**	4	7	Ap	5	·16	1	My	4	·69	3	Je	3	·22	4	Jl	2	·75	6	Au	1●ↄ	·28
																									7	Au	30	·81
4691	1647	1512	28M	·4059	26·6484	4·951	**1590**	5	6	Ap	24	·05	7	My	23	·58	2	Je	22ↄ	·11	3	Jl	21●	·65	5	Au	20	·18
4692	1648	1513	28M	·6647	15·7567	1·108	**1591**	6	3	Ap	13	·42	4	My	12	·95	6	Je	11ↄ	·48	1	Jl	11	·01	2	Au	9	·54
4693	1649	1514	27M	·9234	4·8650	24·820	**1592**	7	7	Ap	1	·79	2	My	1	·32	3	My	30ↄ	·85	6	Jl	28	·91	1	Au	27	·44
																	5	Je	29	·38								
4694	1650	1515	28M	·1822	23·5039	22·953	**1593**	2	6	Ap	20	·69	1	My	20●	·22	2	Je	18	·75	4	Jl	18	·28	5	Au	16	·81
4695	1651	1516	28M	·4409	12·6122	19·110	**1594**	3	4	Ap	10○	·05	5	My	9●	·58	7	Je	8	·11	1	Jl	7	·64	3	Au	6	·17
4696	1652	1517	28M	·6997	1·7205	15·268	**1595**	4	1	Mr	30ↄ	·42	2	Ap	28	·95	6	Je	27	·01	7	Jl	26	·54	2	Au	25	·07
													4	My	28	·48												
4697	1653	1518	27M	·9584	20·3594	13·401	**1596**	5	7	Ap	17	·32	1	My	16	·85	3	Je	15	·38	4	Jl	14	·91	6	Au	13	·44
4698	1654	1519	28M	·2172	9·4677	9·558	**1597**	7	4	Ap	6	·68	6	My	6	·21	7	Je	4	·75	2	Jl	4	·28	3	Au	2	·81
4699	1655	1520	28M	·4759	28·1066	7·691	**1598**	1	3	Ap	25	·58	5	My	25	·11	6	Je	23	·64	1	Jl	23ↄ	·17	2	Au	21	·70
4700	1656	1521	28M	·7347	17·2149	3·848	**1599**	2	7	Ap	14	·95	2	My	14	·48	4	Je	13	·01	5	Jl	12○	·54	7	Au	11	·07
4701	1657	1522	27M	·9935	6·3233	0·128	**1600**	3	5	Ap	13	·32	6	My	2	·85	1	Je	1	·38	2	Je	30◗	.91	5	Au	28	·97
																					4	Jl	30	·44				
4702	1658	1523	28M	·2522	24·9621	25·816	**1601**	5	4	Ap	22	·21	5	My	21○	·74	7	Je	20●	·27	1	Je	19	·81	3	Au	18	·34
4703	1659	1524	28M	·5110	14·0704	21·973	**1602**	6	1	Ap	11	·58	3	My	11○	·11	4	Je	9	·64	6	Jl	9	·17	7	Au	7	·70
4704	1660	1525	28M	·7697	3·1787	18·130	**1603**	7	5	Mr	31	·95	7	Ap	30●○	·48	2	My	30	·01	5	Jl	28	·07	6	Au	26	·60
																	3	Je	28	·54								
4705	1661	1526	28M	·0285	21·8175	16·264	**1604**	1	4	Ap	18●	·85	6	My	18	·38	7	Je	16	·91	2	Jl	16	·44	3	Au	14	·97
4706	1662	1527	28M	·2872	10·9258	14·424	**1605**	3	2	Ap	8●	·21	3	My	7	·74	5	Je	6	·27	6	Jl	5	·80	1	Au	4	·33
4707	1663	1528	28M	·5460	0·0341	8·578	**1606**	4	1	Ap	27	·11	2	My	26	·64	4	Je	25	·17	5	Jl	24	·70	7	Au	23ↄ	·23
4708	1664	1529	28M	·8048	18·6730	6·711	**1607**	5	5	Ap	16	·48	7	My	16	·01	1	Je	14	·54	3	Jl	14	·07	4	Au	12ↄ	·60
4709	1665	1530	28M	·0635	7·7813	2·868	**1608**	6	2	Ap	4	·84	4	My	4	·37	5	Je	2	·91	7	Jl	2ↄ	·44	1	Jl	31	·97
																									3	Au	30	·50
4710	1666	1531	28M	·3223	26·4202	1·002	**1609**	1	1	Ap	23	·74	3	My	23	·27	4	Je	21○	·80	6	Jl	21	·33	7	Au	9	·86
4711	1667	1532	28M	·5810	15·5285	24·714	**1610**	2	6	Ap	13	·11	7	My	12	·64	2	Je	11●ↄ	·17	3	Jl	10	·70	5	Au	9	·23
4712	1668	1533	28M	·8398	4·6368	20·871	**1611**	3	3	Ap	2	·48	5	My	2	·01	6	My	31	·54	2	Jl	29	·60	4	Au	28	·13
																	1	Je	30	·07								
4713	1669	1534	28M	·0985	23·2757	19·004	**1612**	4	2	Ap	20ↄ	·37	3	My	19●	·90	5	Je	18	·43	6	Jl	17	·97	1	Au	16	·50
4714	1670	1535	28M	·3573	12·3840	15·161	**1613**	6	6	Ap	9ↄ	·74	1	My	9	·27	2	Je	7	·80	4	Jl	7	·33	5	Au	5	·86
4715	1671	1536	28M	·6161	1·4923	11·319	**1614**	7	4	Mr	30ↄ	·11	5	Ap	28	·64	1	Je	26	·70	3	Jl	26	·23	4	Au	24	·76
													7	My	28	·17												
4716	1672	1537	28M	·8748	20·1312	9·452	**1615**	1	3	Ap	18	·01	4	My	17	·54	6	Je	16	·07	7	Jl	15	·60	2	Au	14	·13
4717	1673	1538	28M	·1336	9·2395	5·609	**1616**	2	7	Ap	6	·37	1	My	5	·90	3	Je	4	·43	4	Jl	3	·96	6	Au	2○	·49
4718	1674	1539	28M	·3923	27·8784	3·742	**1617**	4	6	Ap	25	·27	7	My	24	·80	2	Je	23	·33	3	Jl	22●ↄ	·86	5	Au	31	·39
4719	1675	1540	28M	·6511	16·9867	27·454	**1618**	5	3	Ap	14	·64	5	My	14	·17	6	Je	12	·70	1	Jl	12	·23	2	Au	10	·76
4720	1676	1541	28M	·9098	6·0950	23·611	**1619**	6	1	Ap	4	·00	2	My	3	·53	4	Je	2ↄ	·07	5	Jl	1●	·60	1	Au	29	·66
																					7	Jl	31	·13				
4721	1677	1542	28M	·1686	24·7338	21·745	**1620**	7	6	Ap	21	·90	1	My	21ↄ	·43	2	Je	19	·96	4	Jl	19	·49	6	Au	18	·02
4722	1678	1543	28M	·4274	13·8421	17·902	**1621**	2	4	Ap	11	·27	5	My	10●ↄ	·80	7	Je	9	·33	1	Jl	8	·86	3	Au	7	·39

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647; +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+21·736; +23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	6	·55	1	O	6	·08	2	N	4ↄ	·61	4	D	4●	·14	**84**	5	Jr	2	·67		7	F	1	·20	1	Mr	1	·73
5	S	24	·44	6	O	23ↄ	·97	1	N	22	·50	3	D	22	·03	**85**	4	Jr	20	·57		6	F	19	·10	7	Mr	20	·63
2	S	13	·81	4	O	13ↄ	·34	5	N	11	·87	7	D	11	·40	**88**	1	Jr	9	·93		3	F	8	·46	4	Mr	9	·99
7	S	3	·18	1	O	2	·71	3	N	1	·24	4	N	30	·77		6	D	30	·30	**87**	7	Jr	28	·83	2	F	27○	·36
6	S	22●	·07	7	O	21	·61	2	N	20	·14	3	D	19	·67	**88**	5	Jr	18	·20		6	F	16ↄ	·73	1	Mr	17	·26
3	S	10	·44	4	O	9	·97	6	N	8	·50	1	D	8	·03	**89**	2	Jr	6	·56		4	F	5●	·09	5	Mr	6	·63
2	S	29	·34	3	O	28	·87	5	N	27	·40	6	D	26	·93	**90**	1	Jr	25	·46		2	F	23	·99	4	Mr	25	·52
6	S	18	·71	1	O	18	·24	2	N	16	·77	4	D	16ↄ	·30	**91**	5	Jr	14	·83		7	F	13	·36	1	Mr	14	·89
4	S	8	·07	5	O	7	·60	7	N	6	·13	1	D	5ↄ	·67	**92**	3	Jr	4	·20		4	F	2	·73	6	Mr	3	·26
2	S	25	·97	4	O	25	·50	6	N	24ↄ	·03	7	D	23	·56	**93**	2	Jr	28	·09		3	F	20	·62	5	Mr	22	·15
7	S	15	·34	1	O	14	·87	3	N	13●	·40	4	D	12	·93	**94**	6	Jr	11	·46		7	F	9	·99	2	Mr	11	·52
4	S	4	·71	6	O	4ↄ	·24	7	N	2	·77	2	D	2	·30		3	D	31	·83	**95**	5	Jr	30	·36	6	F	28	·89
3	S	23●ↄ	·60	5	O	23	·13	6	N	21	·66	1	D	21	·19	**98**	2	Jr	19	·73		4	F	18	·26	5	Mr	18ↄ	·79
7	S	11●ↄ	·97	2	O	11	·50	4	N	10	·03	5	D	9	·56	**97**	7	Jr	8	·09		1	F	6	·62	3	Mr	8●	·15
{5	S	1	·34	1	O	30	·40	2	N	28	·93	4	D	28	·46	**98**	5	Jr	26ↄ	·99		7	F	25	·52	2	Mr	27	·05
{6	S	30	·87																										
4	S	20	·23	5	O	19	·77	7	N	18	·30	1	D	17	·83	**99**	3	Jr	16ↄ	·36		4	F	14●	·89	6	Mr	16	·42
1	S	9	·60	3	O	9	·13	4	N	7	·66	6	D	7	·19	**16**	7	Jr	5ↄ	·72	**00**	2	F	4	·25	3	Mr	4	·79
7	S	27	·50	2	O	27	·03	3	N	25	·56	5	D	25●	·09	**01**	6	Jr	23	·62		1	F	22	·15	2	Mr	23	·68
4	S	16	·87	6	O	16	·40	7	N	14ↄ	·93	2	D	14	·46	**02**	3	Jr	12	·99		5	F	11	·52	7	Mr	13	·05
2	S	6	·23	3	O	5	·76	5	N	4ↄ	·29	6	D	3	·83	**03**	1	Jr	2	·36		2	Jr	31	·89	4	Mr	2	·42
1	S	25	·13	2	O	24○	·66	4	N	23	·19	5	D	22	·72	**04**	7	Jr	21	·25		1	F	19	·78	3	Mr	20	·31
5	S	13	·50	7	O	13	·08	1	N	11	·56	3	D	11	·09	**05**	4	Jr	9	·62		6	F	8	·15	7	Mr	9ↄ	·68
2	S	2ↄ	·87	4	O	2	·40	5	O	31	·93	7	N	30	·46		1	D	29	·99	**06**	3	Jr	28	·52	{5	F	27○	·05
																										{6	Mr	28	·58
1	S	21	·76	3	O	21	·29	4	N	19	·82	6	D	19	·35	**07**	7	Jr	17	·89		2	F	16●	·42	3	Mr	17	·95
6	S	11	·13	7	O	10	·66	2	N	9	·19	3	D	8	·72	**08**	5	Jr	7	·25		6	F	5●	·78	1	Mr	6	·31
5	S	29	·03	6	O	28	·56	1	N	27	·09	2	D	26ↄ	·62	**09**	4	Jr	24	·15		5	F	23	·68	7	Mr	25	·21
2	S	18	·39	3	O	17	·93	5	N	16	·46	6	D	15●ↄ	·99	**10**	1	Jr	14	·52		3	F	13	·05	4	Mr	14	·58
6	S	7	·76	1	O	7	·29	2	N	5	·82	4	D	5●ↄ	·35	**11**	5	Jr	3	·88		7	F	2	·41	1	Mr	4	·95
5	S	26	·66	7	O	26	·19	1	N	24●	·72	3	D	24	·25	**12**	4	Jr	22	·78		6	F	21	·31	7	Mr	21	·84
3	S	15	·03	4	O	14○	·56	6	N	13	·09	7	D	12	·62	**13**	2	Jr	11	·15		3	F	9	·68	5	Mr	11	·21
7	S	4	·39	1	O	3ↄ	·92	3	N	2	·45	4	D	1	·99		6	D	31	·52	**14**	1	Jr	30	·05	2	F	28	·58
6	S	23●ↄ	·29	7	O	22	·82	2	N	21	·35	3	D	28	·88	**15**	5	Jr	19	·41		6	F	17	·94	1	Mr	19●	·47
3	S	12	·66	5	O	12	·19	6	N	10	·72	1	D	10	·25	**16**	2	Jr	8	·78		4	F	7○	·31	5	Mr	7	·84
{1	S	1●	·03	4	O	30	·09	5	N	28	·62	7	D	28	·15	**17**	1	Jr	26ↄ	·68		3	F	25	·21	4	Mr	26	·74
{2	S	30	·56																										
6	S	19	·92	1	O	19	·45	2	N	17	·98	4	D	17	·51	**18**	6	Jr	16ↄ	·05		7	F	14	·58	2	Mr	14	·11
4	S	9	·29	5	O	8	·82	7	N	7	·35	1	D	6	·88	**19**	3	Jr	5	·41		4	F	3	·94	6	Mr	5	·47
3	S	28	·19	4	O	27	·72	6	N	26ↄ	·25	7	D	25	·78	**20**	2	Jr	24	·31		3	F	22	·84	5	Mr	23	·37
7	S	16	·55	2	O	16	·09	3	N	14ↄ	·62	5	D	14	·15	**21**	6	Jr	12	·68		1	F	11	·21	2	Mr	12	·74
4	S	5	·92	6	O	5	·45	7	N	3ↄ	·98	2	D	3	·51	**22**	4	Jr	2	·04		5	Jr	31	·57	7	Mr	2	·11

TABLE X–

									⊙'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
			Commencement of Solar Year.						Vaisakha.				Jyeshta.				Ashada				Sravana				Bhadrapada			
Kaliyuga.	Vikrama Era.	Saka Era.	Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4723	1679	1544	28M	·6861	2·9504	14·059	**1622**	3	1	Mr	31	·64	3	Ap	30	·17	4	My	29	·70	7	Jl	27	·76	2	Au	26	·29
																	6	Je	28	·23								
4724	1680	1545	28M	·9449	21·5893	12·192	**1623**	4	7	Ap	19	·53	2	My	19	·06	3	Je	17	·59	5	Jl	17	·13	6	Au	15	66
4725	1681	1546	28M	·2036	10·6976	8·350	**1624**	5	4	Ap	7	·90	6	My	7	·43	7	Je	5	·96	2	Jl	5	·49	4	Au	4	·02
4726	1682	1547	28M	·4624	29·3365	6·483	**1625**	7	3	Ap	26	·80	5	My	26	·33	6	Je	24	·86	1	Jl	24	·39	2	Au	22○	·92
4727	1683	1548	28M	·7211	18·4448	2·640	**1626**	1	1	Ap	16	·17	2	My	15	·70	4	Je	14	·23	5	Jl	13	·76	7	Au	12	·29
4728	1684	1549	28M	·9799	7·5531	26·352	**1627**	2	5	Ap	5	·53	7	My	5	·06	1	Je	3	·59	3	Jl	3○	·12	6	Au	31	·19
																					4	Au	1●	·65				
4729	1685	1550	28M	·2386	26·1920	24·485	**1628**	3	4	Ap	23	·43	5	My	22	·96	7	Je	21○	·49	2	Jl	21	·02	3	Au	19	·55
4730	1686	1551	28M	·4974	15·3003	20·643	**1629**	5	1	Ap	12	·80	3	My	12	·33	4	Je	10●	·86	6	Jl	10	·39	7	Au	8	·92
4731	1687	1552	28M	·7562	4·4086	16·800	**1630**	6	6	Ap	2	·16	7	My	1○	·69	2	My	31	·23	5	Jl	29	·29	6	Au	27	·82
																	3	Je	29	·76								
4732	1688	1553	29M	·0149	23·0475	14·933	**1631**	7	5	Ap	21○	·06	6	My	20●	·59	1	Je	19	·12	2	Jl	18	·65	4	Au	17	·18
4733	1689	1554	28M	·2737	12·1558	11·090	**1632**	1	2	Ap	9●○	·43	3	My	8	·96	5	Je	7	·49	7	Jl	7	·02	1	Au	5	·55
4734	1690	1555	28M	·5324	1·2641	7·248	**1633**	3	6	Mr	29	·80	2	My	27	·86	4	Je	26	·39	5	Jl	25	·92	7	Au	24	·45
									1	Ap	28	·33																
4735	1691	1556	28M	·7912	19·9030	5·381	**1634**	4	5	Ap	17	·69	7	My	17	·22	1	Je	15	·75	3	Jl	15	·29	4	Au	13○	·82
4736	1692	1557	29M	·0499	9·0113	1·538	**1635**	5	3	Ap	7	·06	4	My	6	·59	6	Je	5	·12	7	Jl	4	·65	2	Au	3○	·18
																									3	S	1	·71
4737	1693	1558	28M	·3087	27·6502	27·226	**1636**	6	1	Ap	24	·96	3	My	24	·49	5	Je	23	·02	6	Jl	22●○	·55	1	Au	21	·08
4738	1694	1559	28M	·5675	16·7585	23·383	**1637**	1	6	Ap	14	·33	7	My	13	·86	2	Je	12	·39	3	Jl	11	.92	5	Au	10	·45
4739	1695	1560	28M	·8262	5·8668	19·540	**1638**	2	3	Ap	3	·69	5	My	3	·22	6	Je	1○	·75	1	Jl	1	·28	4	Au	29	·35
																					2	Jl	30	·81				
4740	1396	1561	29M	·0850	24·5056	17·674	**1639**	3	2	Ap	22	·59	4	My	22○	·12	5	Je	20	·65	7	Jl	20	·18	1	Au	18	·71
4741	1697	1562	28M	·3437	13·6139	13·831	**1640**	4	6	Ap	10	·96	1	My	10	·49	3	Je	9	·02	4	Jl	8	·55	6	Au	7	·08
4742	1698	1563	28M	·6025	2·7222	9·988	**1641**	6	4	Mr	31○	·32	5	Ap	29	·85	1	Je	27	·92	3	Jl	27	·45	4	Au	25	·98
													7	My	27	·39												
4743	1699	1564	28M	·8612	21·3611	8·121	**1642**	7	3	Ap	19	·22	4	My	18	·75	6	Je	17	·28	7	Jl	16	·81	2	Au	15	·34
4744	1700	1565	29M	·1200	10·4694	4·279	**1643**	1	7	Ap	8	·59	2	My	8	·12	3	Je	6	·65	5	Jl	6	·18	6	Au	4	·71
4745	1701	1566	28M	·3787	29·1083	2·412	**1644**	2	6	Ap	26	·49	1	My	26	·02	2	Je	24	·55	4	Jl	24	·08	5	Au	22●	·61
4746	1702	1567	28M	·6375	18·2166	26·124	**1645**	4	3	Ap	15	·85	5	My	15	·38	6	Je	13	·91	1	Jl	13○	·45	2	Au	11●	·98
4747	1703	1568	28M	·8963	7·3249	22·281	**1646**	5	1	Ap	5	·22	2	My	4	·75	4	Je	3	·28	5	Jl	2○	·81	1	Au	30	·87
																					7	Au	1	·34				
4748	1704	1569	29M	·1550	25·9638	20·414	**1647**	6	7	Ap	24	·12	1	My	23	·65	3	Je	22●	·18	4	Jl	21	·71	6	Au	20	·24
4749	1705	1570	28M	·4138	15·0721	16·571	**1648**	7	4	Ap	12	·49	6	My	12○	·02	7	Je	10●	·55	2	Jl	10	·08	3	Au	8	·61
4750	1706	1571	28M	·6725	4·1804	12·729	**1649**	2	1	Ap	1	·85	3	My	1○	·38	4	My	30	·91	7	Jl	28	·97	2	Au	30	·51
																	6	Je	29	·44								
4751	1707	1572	28M	·9313	22·8193	10·862	**1650**	3	7	Ap	20○	·75	2	My	20	·28	3	Je	18	·81	5	Jl	18	·34	6	Au	16	·87
4752	1708	1573	29M	·1900	11·9276	7·019	**1651**	4	5	Ap	10	·12	6	My	9	·65	1	Je	8	·18	2	Jl	7	·71	4	Au	6	·24
4753	1709	1574	28M	·4488	1·0359	3·176	**1652**	5	2	Mr	29●	·48	5	My	27	·55	7	Je	26	·08	1	Jl	25	·61	3	Au	24○	·14
									4	Ap	28	·01																
4754	1710	1575	28M	·7076	19·6748	1·310	**1653**	7	1	Ap	17	·38	2	My	16	·91	4	Je	15	·44	5	Jl	14	·97	7	Au	13○	·50
4755	1711	1576	28M	·9663	8·7831	25·022	**1654**	1	5	Ap	6	·75	7	My	6	·28	1	Je	4	·81	3	Jl	4	·34	4	Au	2●○	·87
																									6	S	1	·40
4756	1712	1577	29M	·2251	27·4220	23·155	**1655**	2	4	Ap	25	·65	6	My	25	·18	7	Je	23	·71	2	Jl	23●	·24	3	Au	21	·77
4757	1713	1578	28M	·4838	16·5303	19·312	**1656**	3	2	Ap	14	·01	3	My	13	·54	5	Je	12○	·07	6	Jl	11	·61	1	Au	10	·14
4758	1714	1579	28M	·7426	5·6386	15·469	**1657**	5	6	Ap	3	·38	7	My	2	·91	2	Je	1●○	·44	3	Jl	1	·97	7	Au	27	·03
																					5	Jl	30	·50				
4759	1715	1580	29M	·0013	24·2774	13·603	**1658**	6	5	Ap	22	·28	6	My	21●	·81	1	Je	20	·34	2	Jl	19	·87	4	Au	18	·40
4760	1716	1581	29M	·2601	13·3857	9·760	**1659**	7	2	Ap	11○	·65	4	My	11●	·18	5	Je	9	·71	7	Jl	9	·24	1	Au	7	·77
4761	1717	1582	28M	·5189	2·4940	5·917	**1660**	1	7	Mr	31○	·01	1	Ap	29	·54	4	Je	27	·60	6	Jl	27	·13	7	Au	25	·67
													3	My	29	·07												

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				{ +324·83647 +354·36705 }			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				{ + 21·736 + 23·712 }			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
3	S	24	·82 ●	5	O	24●	·35	6	N	22	·88	1	D	22	·41	**23**	2	Jr	20	·94		4	F	19	·47	6	Mr	21○	·00
1	S	14○	·19	2	O	13	·72	4	N	12	·25	5	D	11	·78	**24**	7	Jr	10	·31		1	F	8	·84	3	Mr	9●○	·37
5	S	2○	·55	7	O	2	·08	1	O	31	·61	3	N	30	·15		4	D	29	·68	**25**	6	Jr	28	·21	{ 7	F	26○	·74
																										2	Mr	28	·27 }
4	S	21	·45	5	O	21	·98	7	N	19	·51	2	D	19	·04	**26**	3	Jr	17	·57		5	F	16●	·10	6	Mr	17	·63
1	S	10	·82	3	O	10	·35	4	N	8	·88	6	D	8	·41	**27**	7	Jr	6○	·94		2	F	5	·47	4	Mr	7	·00
7	S	29	·72	2	O	29	·25	3	N	27	·78	5	D	27○	·31	**28**	6	Jr	25	·84		1	F	24	·37	2	Mr	24	·90
5	S	18	·08	6	O	17	·61	1	N	16	·14	2	D	15○	·67	**29**	4	Jr	14	·21		5	F	12	·74	7	Mr	14	·27
2	S	7	·45	3	O	6	·98	5	N	5	·51	7	D	5	·04	**30**	1	Jr	3	·57		3	F	2	·10	4	Mr	3	·63
1	S	26	·35	2	O	25○	·88	4	N	24●	·41	5	D	23	·94	**31**	7	Jr	22	·47		2	F	21	·00	3	Mr	22	·53
5	S	15	·71	7	O	15●○	·25	1	N	13	·78	3	D	13	·31	**32**	4	Jr	11	·84		6	F	10	·37	7	Mr	10	·90
3	S	4	·08	4	O	3○	·61	6	N	2	·14	7	D	1	·67		2	D	31	·20	**33**	3	Jr	29	·73	5	F	28	·27
1	S	22●	·98	3	O	22	·51	5	N	21	·04	6	D	20	·57	**34**	1	Jr	19	·10		2	F	17○	·63	4	Mr	19●	·16
6	S	12	·35	7	O	11	·88	2	N	10	·41	3	D	9	·94	**35**	5	Jr	8	·47		7	F	7○	·00	1	Mr	8	·53
5	O	1	·24	6	O	30	·77	1	N	29	·31	2	D	28	·84	**36**	4	Jr	27○	·37		5	F	25	·90	7	Mr	26	·43
2	S	19	·61	4	O	19	·14	5	N	17	·67	7	D	17	·20	**37**	1	Jr	15●	·73		3	F	14	·26	4	Mr	15	·79
6	S	8	·98	1	O	8	·51	3	N	7	·04	4	D	6○	·57	**38**	6	Jr	5●	·10		7	F	3	·63	2	Mr	5	·16
5	S	27	·88	7	O	27	·41	1	N	25○	·94	3	D	25	·47	**39**	5	Jr	24	·00		6	F	22	·53	1	Mr	24	·06
3	S	17	·24	4	O	16	·77	6	N	15○	·30	7	D	14	·83	**40**	2	Jr	13	·37		3	F	11	·90	5	Mr	12	·43
7	S	5	·61	2	O	5	·14	3	N	3	·67	5	D	3	·20	**41**	6	Jr	1	·73		1	Jr	30	·26	2	Mr	1	·79
6	S	24○	·51	1	O	24●	·04	2	N	22	·57	4	D	22	·10	**42**	5	Jr	20	·63		7	F	19	·16	1	Mr	20○	·69
3	S	13○	·87	5	O	3	·41	6	N	11	·94	1	D	11	·47	**43**	3	Jr	9	·00		4	F	8	·53	6	Mr	10●○	·06
1	S	3●○	·24	2	O	2	·77	4	N	1	·30	5	N	30	·83		7	D	30	·36	**44**	1	Jr	28	·89	{ 3	F	27	·43
																										4	Mr	27	·96 }
7	S	21	·14	1	O	20	·67	3	N	19	·20	4	D	18	·73	**45**	6	Jr	17○	·26		7	F	15	·79	2	Mr	17	·32
4	S	10	·51	6	O	10	·04	7	N	8	·57	2	D	8	·10	**46**	3	Jr	6○	·63		5	F	5	·16	6	Mr	6	·69
3	S	29	·40	4	O	28	·93	6	N	27	·47	1	D	27○	·00	**47**	2	Jr	25	·53		4	F	24	·06	5	Mr	25	·59
7	S	18	·77	2	O	18	·30	3	N	16	·83	5	D	16●	·36	**48**	6	Jr	14	89		1	F	13	·42	2	Mr	13	·95
5	S	7	·14	6	O	6	·67	1	N	5○	·20	2	D	4	·73	**49**	4	Jr	3	·26		5	F	1	·79	7	Mr	3	·32
4	S	26	·04	5	O	25○	·57	7	N	24	·10	1	D	23	·63	**50**	3	Jr	22	·16		4	F	20	·69	6	Mr	22	·22
1	S	15	·40	2	O	14●○	·93	4	N	13	·46	5	D	12	·99	**51**	7	Jr	11	·53		2	F	10	·06	3	Mr	11	·59
5	S	4	·77	7	O	4	·30	1	N	2	·83	3	D	2	·36		4	D	31	·89	**52**	6	Jr	30	·42	7	F	28○	·95
4	S	22	·67	6	O	22	·20	7	N	20	·73	2	D	20	·26	**53**	3	Jr	18	·79		5	F	17○	·32	6	Mr	18●	·85
2	S	12	·03	3	O	11	·57	5	N	10	·10	6	D	9	·63	**54**	1	Jr	8	·16		2	F	6●○	·69	4	Mr	8	·22
7	S	30	·93	2	O	30	·46	3	N	28	·99	5	D	28	·52	**55**	7	Jr	27●	·05		1	F	25	·59	3	Mr	27	·12
5	S	20	·30	6	O	19	·83	1	N	18	·36	2	D	17○	·89	**56**	4	Jr	16	·42		5	F	14	·95	7	Mr	15	·48
2	S	8	·67	4	O	8	·20	5	N	6	·73	7	D	6○	·26	**57**	1	Jr	4	·79		3	F	3	·32	4	Mr	4	·85
1	S	27	·56	3	O	27	·09	4	N	25○	·63	6	D	25	·16	**58**	7	Jr	23	·69		2	F	22	·22	3	Mr	23	·75
5	S	16	·93	7	O	16	·46	1	N	14	·99	3	D	14	·52	**59**	5	Jr	13	·05		6	F	11	·58	1	Mr	13	·11
3	S	6	·30	4	O	5○	·83	6	N	4	·36	7	D	3	·89	**60**	2	Jr	2	·42		3	Jr	31	·95	5	Mr	1	·48
2	S	24○	·20	3	O	23	·73	5	N	22	·26	6	D	21	·79	**61**	1	Jr	20	·32		2	F	18	·85	4	Mr	20●○	·38

TABLE X–

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha ⊙'s Anom col. 6 ☾'s Anom col. 7 Week-day	Month	Day	Fraction	Jyeshta + 29·53059 + 1·976 Week-day	Month	Day	Fraction	Ashada + 59·06117 + 3·952 Week-day	Month	Day	Fraction	Sravana + 88·59176 + 5·928 Week-day	Month	Day	Fraction	Bhadrapada + 118·12235 + 7·904 Week-day	Month	Day	Fraction
4762	1718	1583	28M	·7776	21·1329	4·050	**1661**	3	5	Ap	18	·91	7	My	18	·44	1	Je	16	·97	3	Jl	16	·50	5	Au	15	·03
4763	1719	1584	29M	·0364	10·2412	0·208	**1662**	4	3	Ap	8	·28	4	My	7	·81	6	Je	6	·34	7	Jl	5	·87	2	Au	4	·40
4764	1720	1585	29M	·2951	28·8801	25·895	**1663**	5	2	Ap	27	·17	3	My	26	·71	5	Je	25	·24	6	Jl	24○	·77	1	Au	23	·30
4765	1721	1586	28M	·5539	17·9884	22·053	**1664**	6	6	Ap	15	·54	1	My	15	·07	2	Je	13	·60	4	Jl	13○	·13	5	Au	11	·66
4766	1722	1587	28M	·8126	7·0967	18·210	**1665**	1	3	Ap	4	·91	5	My	4	·44	6	Je	2	·97	1	Jl	2	·50	4	Au	30	·56
																					3	Au	1	·03				
4767	1723	1588	29M	·0714	25·7356	16·343	**1666**	2	2	Ap	23	·81	4	My	23○	·34	5	Je	21●	·87	7	Jl	21	·40	1	Au	19	·93
4768	1724	1589	29M	·3301	14·8439	12·500	**1667**	3	7	Ap	13	·17	1	My	12○	·70	3	Je	11●	·23	4	Jl	10	·77	6	Au	9	·30
4769	1725	1590	28M	·5889	3·9522	8·658	**1668**	4	4	Ap	1	·54	6	My	1○	·07	7	My	30	·60	3	Jl	28	·66	5	Au	27	·19
																	2	Je	29	·13								
4770	1726	1591	28M	·8477	22·5911	6·791	**1669**	6	3	Ap	20●	·44	4	My	19	·97	6	Je	18	·50	1	Jl	18	·03	2	Au	16	·56
4771	1727	1592	29M	·1064	11·6994	2·948	**1670**	7	7	Ap	9	·81	2	My	9	·34	3	Je	7	·87	5	Jl	7	·40	6	Au	5	·93
4772	1728	1593	29M	·3652	0·8077	26·660	**1671**	1	5	Mr	30	·17	1	My	28	·23	2	Je	26	·76	4	Jl	26	·29	5	Au	24●○	·83
									6	Ap	28	·70																
4773	1729	1594	28M	·6239	19·4466	24·793	**1672**	2	4	Ap	17	·07	5	My	16	·60	7	Je	15	·13	1	Jl	14	·66	3	Au	13○	·19
4774	1730	1595	28M	·8827	8·5549	20·951	**1673**	4	1	Ap	6	·44	2	My	5	·97	4	Je	4	·50	6	Jl	4	·03	7	Au	2●	·56
																									2	S	1	·09
4775	1731	1596	29M	·1414	27·1937	19·084	**1674**	5	7	Ap	25	·33	1	My	24	·87	3	Je	23○	·40	4	Jl	22●	·93	6	Au	21	·46
4776	1732	1597	29M	·4002	16·3020	15·241	**1675**	6	4	Ap	14	·70	6	My	14	·23	7	Je	12●○	·76	2	Jl	12	·29	3	Au	10	·82
4777	1733	1598	28M	·6590	5·4103	11·398	**1676**	7	2	Ap	3	·07	3	My	2	·60	5	Je	1●	·13	6	Je	30	·66	2	Au	28	·72
																					1	Jl	30	·19				
4778	1734	1599	28M	·9177	24·0492	9·531	**1677**	2	7	Ap	21○	·97	2	My	21●	·50	4	Je	20	·03	5	Jl	19	·56	7	Au	18	·09
4779	1735	1600	29M	·1765	13·1575	5·689	**1678**	3	5	Ap	11○	·33	6	My	10	·86	1	Je	9	·39	2	Jl	8	·93	4	Au	7	·46
4780	1736	1601	29M	·4352	2·2658	1·846	**1679**	4	2	Mr	31○	·70	4	Ap	30	·23	7	Je	28	·29	1	Jl	27	·82	3	Au	26	·35
													5	My	29	·76												
4781	1737	1602	28M	·6940	20·9047	27·534	**1680**	5	1	Ap	18	·60	3	My	18	·13	4	Je	16	·66	6	Jl	16	·19	7	Au	14	·72
4782	1738	1603	28M	·9527	10·0130	23·691	**1681**	7	5	Ap	7	·97	7	My	7	·50	2	Je	6	·03	3	Jl	5	·56	5	Au	4○	·09
4783	1739	1604	29M	·2115	28·6519	21·824	**1682**	1	4	Ap	26	·86	6	My	26	·39	7	Je	24	·92	2	Jl	24○	·45	3	Au	22	·99
4784	1740	1605	29M	·4703	17·7602	17·982	**1683**	2	2	Ap	16	·23	3	My	15	·76	5	Je	14	·29	6	Jl	13●○	·82	1	Au	12	·35
4785	1741	1606	28M	·7290	6·8685	14·139	**1684**	3	6	Ap	4	·60	1	My	4	·13	2	Je	2○	·66	4	Jl	2	·19	7	Au	30	·25
																					5	Jl	31	·72				
4786	1742	1607	28M	·9878	25·5074	12·272	**1685**	5	5	Ap	23	·49	7	My	23○	·03	1	Je	21	·56	3	Jl	21	·09	4	Au	19	·62
4787	1743	1608	29M	·2465	14·6157	8·429	**1686**	6	2	Ap	12	·86	4	My	12●○	·39	5	Je	10	·92	7	Jl	10	·45	1	Au	8	·98
4788	1744	1609	29M	·5053	3·7240	4·587	**1687**	7	7	Ap	2	·23	1	My	1●	·76	3	My	31	·29	6	Jl	29	·35	7	Au	27	·88
																	4	Je	29	·82								
4789	1745	1610	28M	·7640	22·3629	2·720	**1688**	1	6	Ap	20●	·13	7	My	19	·66	2	Je	18	·19	3	Jl	17	·72	5	Au	16	·25
4790	1746	1611	29M	·0228	11·4712	26·432	**1689**	3	3	Ap	9	·49	5	My	9	·02	6	Je	7	·55	1	Jl	7	·09	2	Au	5	·62
4791	1747	1612	29M	·2815	0·5795	22·589	**1690**	4	7	Mr	29	·86	3	My	27	·92	5	Je	26	·45	6	Jl	25	·98	1	Au	24●○	·51
									2	Ap	28	·39																
4792	1748	1613	29M	·5403	19·2184	20·722	**1691**	5	6	Ap	17	·76	1	My	17	·29	2	Je	15	·82	4	Jl	15	·35	5	Au	13	·88
4793	1749	1614	28M	·7991	8·3267	16·880	**1692**	6	4	Ap	6	·13	5	My	5	·66	7	Je	4	·19	1	Jl	3○	·72	3	Au	2	·25
																									4	Au	31	·78
4794	1750	1615	29M	·0578	26·9655	15·013	**1693**	1	3	Ap	25	·02	4	My	24	·55	6	Je	23●○	·08	7	Jl	22	·61	2	Au	21	·15
4795	1751	1616	29M	·3166	16·0738	11·170	**1694**	2	7	Ap	14	·39	1	My	13	·92	3	Je	12○	·45	4	Jl	11	·98	6	Au	10	·51
4796	1752	1617	29M	·5753	5·1821	7·327	**1695**	3	4	Ap	3	·76	6	My	3○	·29	7	Je	1	·82	3	Jl	30	·88	5	Au	29	·41
																	2	Jl	1	·35								
4797	1753	1618	28M	·8341	23·8210	5·461	**1696**	4	3	Ap	21○	·65	5	My	21	·19	6	Je	19	·72	1	Jl	19	·25	2	Au	17	·78
4798	1754	1619	29M	·0928	12·9293	1·618	**1697**	6	1	Ap	11●○	·02	2	My	10	·55	4	Je	9	·08	5	Jl	8	·61	7	Au	7	·14
4799	1755	1620	29M	·3516	2·0370	25·330	**1698**	7	5	Mr	31	·39	6	Ap	29	·92	2	Je	27	·98	4	Jl	27	·51	6	Au	26	·04
													1	My	29	·45												
4800	1756	1621	29M	·6104	20·6765	23·463	**1699**	1	4	Ap	19	·29	5	My	18	·82	7	Je	17	·35	1	Jl	16	·88	3	Au	15○	·41

Surya Siddhanta.

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411				+ 236·24470					+ 265·77529					+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832				+ 15·808					+ 17·784					+ 19·760				+21·736 +23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	13ↄ	·56	1	O	13	·09	2	N	11	·62	4	D	11	·15	**62**	5	Jr	9	·69		7	F	8	·22	1	Mr	9●	·75
3	S	2●	·93	5	O	2	·46	6	O	31	·99	1	N	30	·52		3	D	30	·05	**63**	4	Jr	28○	·58	{ 6	F	27	·11
																										{ 7	Mr	28	·64
2	S	21	·83	4	O	21	·36	5	N	19	·89	7	D	19	·42	**64**	1	Jr	17●○	·95		3	F	16	·48	5	Mr	17	·01
7	S	10	·19	1	O	9	·73	3	N	8	·26	4	D	7	·79	**65**	6	Jr	6●○	·32		7	F	4	·85	2	Mr	6	·38
6	S	29	·09	7	O	28	·62	2	N	27	·15	3	D	26●	·68	**66**	5	Jr	25	·21		6	F	23	·75	1	Mr	25	·28
3	S	18	·46	4	O	17	·99	6	N	16ↄ	·52	1	D	16	·05	**67**	2	Jr	14	·58		4	F	13	·11	5	Mr	14	·64
7	S	7	·83	2	O	7	·36	3	N	5ↄ	·89	5	D	5	·42	**68**	6	Jr	3	·95		1	F	2	·48	3	Mr	3	·01
6	S	25	·72	1	O	25○	·25	2	N	23	·79	4	D	23	·32	**69**	5	Jr	21	·85		7	F	20	·38	1	Mr	21	·91
4	S	15	·09	5	O	14	·62	7	N	13	·15	1	D	12	·68	**70**	3	Jr	11	·21		4	F	9	·74	6	Mr	11○	·27
1	S	4ↄ	·46	2	O	3	·99	4	N	2	·52	6	D	2	·05		7	D	31	·58	**71**	2	Jr	30	·11	3	F	28○	·64
7	S	23	·36	1	O	22	·89	3	N	21	·42	4	D	20	·95	**72**	6	Jr	19	·48		1	F	18○	·01	2	Mr	18	·54
4	S	11	·72	6	O	11	·25	7	N	9	·78	2	D	9	·31	**73**	3	Jr	7	·85		5	F	6	·38	6	Mr	7	·91
3	S	30	·62	5	O	30	·15	6	N	28	·68	1	D	28ↄ	·21	**74**	2	Jr	26	·74		4	F	25	·27	5	Mr	26	·80
7	S	19	·99	2	O	19	·52	4	N	18	·05	5	D	17○	·58	**75**	7	Jr	16	·11		1	F	14	·64	3	Mr	16	·17
5	S	9	·35	6	O	8	·89	1	N	7	·42	2	D	6ↄ	·95	**76**	4	Jr	5	·48		6	F	4	·01	7	Mr	4	·54
4	S	27	·25	5	O	26	·78	7	N	25●	·31	1	D	24	·84	**77**	3	Jr	23	·37		4	F	21	·91	6	Mr	23	·44
1	S	16	·62	3	O	16ↄ	·15	4	N	14	·68	6	D	14	·21	**78**	7	Jr	12	·74		2	F	11	·27	3	Mr	12	·80
5	S	5	·99	7	O	5ↄ	·52	2	N	4	·05	3	D	3	·58	**79**	5	Jr	2	·11		6	Jr	31	·64	1	Mr	2	·17
4	S	24○	·88	6	O	24	·41	7	N	22	·95	2	D	22	·48	**80**	4	Jr	21	·01		5	F	19	·54	7	Mr	20●	·07
2	S	13	·25	3	O	12	·78	5	N	11	·31	6	D	10	·84	**81**	1	Jr	9	·37		2	F	7○	·90	4	Mr	9	·43
{ 6	S	2●	·62	2	O	31	·68	4	N	30	·21	**Pausha Kshaya**					5	D	29	·74	**82**	7	Jr	28○	·27	{ 1	F	26	·80
{ 1	O	2	·15																							{ 3	Mr	28	.33
5	S	21	·52	7	O	21	·05	1	N	19	·58	3	D	19	·11	**83**	4	Jr	17○	·64		6	F	16	·17	7	Mr	17	·70
2	S	10	·88	4	O	10	·41	5	N	8	·94	7	D	8	·47	**84**	2	Jr	7	·01		3	F	5	·54	5	Mr	6	.07
1	S	28	·78	3	O	28	·31	4	N	26ↄ	·84	6	D	26	·37	**85**	7	Jr	24	·90		2	F	23	·43	3	Mr	24	·96
6	S	18	·15	7	O	17	·68	2	N	16●○	·21	3	D	15	·74	**86**	5	Jr	14	·27		6	F	12	·80	1	Mr	14	·33
3	S	7	·51	5	O	7	·05	6	N	5ↄ	·58	1	D	5	·11	**87**	2	Jr	3	·64		4	F	2	·17	5	Mr	3	·70
2	S	26	·41	3	O	25●	·94	5	N	24	·47	7	D	24	·00	**88**	1	Jr	22	·53		3	F	21	·07	4	Mr	21○	·60
6	S	14○	·78	1	O	14	·31	2	N	12	·84	4	D	12	·37	**89**	5	Jr	10	·90		7	F	9	·43	1	Mr	10○	·96
4	S	4ↄ	·15	5	O	3	·68	7	N	2	·21	1	D	1	·74		3	D	31	·27	**90**	4	Jr	29	·80	6	F	28○	·33
3	S	23	·04	4	O	22	·57	6	N	21	·11	7	D	20	·64	**91**	2	Jr	19	·17		3	F	17●	·70	5	Mr	19	·23
7	S	12	·41	1	O	11	·94	3	N	10	·47	5	D	10	·00	**92**	6	Jr	8○	·53		1	F	7●	·06	2	Mr	7	·59
6	S	30	·31	7	O	29	·84	2	N	28	·37	3	D	27○	·90	**93**	5	Jr	26	·43		6	F	24	·96	1	Mr	26	·49
3	S	19	·68	5	O	19	·21	6	N	17	·74	1	D	17○	·27	**94**	2	Jr	15	·80		4	F	14	·33	5	Mr	15	·86
1	S	9	·04	2	O	8	·57	4	N	7	·10	5	D	6	·63	**95**	7	Jr	5	·17		1	F	3	·70	3	Mr	5	·23
6	S	27	·94	1	O	27○	·47	3	N	26●	·00	4	D	25	·53	**96**	6	Jr	24	·06		7	F	22	·59	2	Mr	23	·12
4	S	16	·31	5	O	15ↄ	·84	7	N	14	·37	1	D	13	·90	**97**	3	Jr	12	·43		4	F	10	·96	6	Mr	12	·49
1	S	5	·67	3	O	5●ↄ	·21	4	N	3	·74	6	D	3	·27	**98**	7	Jr	1	·80		2	Jr	31	·33	3	Mr	1	·80
7	S	24●	·57	2	O	24	·10	3	N	22	·63	5	D	22	·16	**99**	6	Jr	20	·69		1	F	19○	·23	2	Mr	20●	·76
4	S	13●	·94	6	O	13	·47	1	N	12	·00	2	D	11	·53	**17**	4	Jr	10	·06	**00**	5	F	8○	·59	7	Mr	9	·12

TABLE X—

☉'s Anom col. 6 + 29·53059 + 59·06117 + 88·59176 + 118·12235

☾'s Anom col. 7 + 1·976 + 3·952 + 5·928 + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
4801	1757	1622	28M	·8691	9·7848	19·623	**1700**	2	1	Ap	7	·65	3	My	7	·18	4	Je	5	·71	6	Jl	5	·24	7	Au	3○	·78
4802	1758	1623	29M	·1279	28·4237	17·756	**1701**	4	7	Ap	26	·55	2	My	26	·08	3	Je	24	·61	5	Jl	24●○	·14	6	Au	22	·67
4803	1759	1624	29M	·3866	17·5320	13·913	**1702**	5	4	Ap	15	·92	6	My	15	·45	7	Je	13	·98	2	Jl	13	·51	4	Au	12	·04
4804	1760	1625	29M	·6454	6·6403	10·071	**1703**	6	2	Ap	5	·28	3	My	4	·82	5	Je	3○	·35	6	Jl	2	·88	2	Au	30	·94
																					1	Au	1	·41				
4805	1761	1626	28M	·9041	25·2792	8·204	**1704**	1	1	Ap	23	·18	2	My	22○	·71	4	Je	21	·24	5	Jl	20	·77	7	Au	19	·31
4806	1762	1627	29M	·1629	14·3875	4·361	**1705**	2	5	Ap	12	·55	7	My	12	·08	1	Je	10	·61	3	Jl	10	·14	4	Au	8	·67
4807	1763	1628	29M	·4217	3·4958	0·518	**1706**	3	2	Ap	1○	·92	4	My	1●	·45	7	Je	29	·51	2	Jl	29	·04	3	Au	27	·57
													5	My	30	·98												
4808	1764	1629	29M	·6804	22·1347	26·206	**1707**	4	1	Ap	20●	·81	3	My	20	·35	4	Je	18	·88	6	Jl	18	·41	7	Au	16	·94
4809	1765	1630	28M	·9392	11·2430	22·363	**1708**	5	6	Ap	9	·18	7	My	8	·71	2	Je	7	·24	3	Jl	6	·77	5	Au	5	·30
4810	1766	1631	29M	·1979	0·3513	18·521	**1709**	7	3	Mr	29	·55	6	My	27	·61	1	Je	26	·14	2	Jl	25	·67	4	Au	24●	·20
									5	Ap	28	·08																
4811	1767	1632	29M	·4567	18·9902	16·654	**1710**	1	2	Ap	17	·45	3	My	16	·98	5	Je	15	·51	7	Jl	15○	·04	1	Au	13	·57
4812	1768	1633	29M	·7154	8·0984	12·811	**1711**	2	6	Ap	6	·81	1	My	6	·34	2	Je	4	·87	4	Jl	4○	·40	5	Au	2	·94
																									7	S	1	·47
4813	1769	1634	28M	·9742	26·7373	10·944	**1712**	3	5	Ap	24	·71	7	My	24	·24	1	Je	22●○	·77	3	Jl	22	·30	4	Au	20	·83
4814	1770	1635	29M	·2329	15·8456	7·102	**1713**	5	3	Ap	14	·08	4	My	13○	·61	6	Je	12	·14	7	Jl	11	·67	2	Au	10	·20
4815	1771	1636	29M	·4917	4·9539	3·259	**1714**	6	7	Ap	3	·45	1	My	2○	·98	3	Je	1	·51	6	Jl	30	·57	1	Au	29	·10
																	5	Jl	1	·04								
4816	1772	1637	29M	·7505	23·5928	1·392	**1715**	7	6	Ap	22●○	·34	7	My	21	·87	2	Je	20	·40	3	Jl	19	·93	5	Au	18	·47
4817	1773	1638	29M	·0092	12·7011	25·104	**1716**	1	3	Ap	10●	·71	5	My	10	·24	6	Je	8	·77	1	Jl	8	·30	2	Au	6	·83
4818	1774	1639	29M	·2680	1·8094	21·261	**1717**	3	1	Mr	31	·08	2	Ap	29	·61	5	Je	27	·67	7	Jl	27	·20	1	Au	25○	·73
													4	My	29	·14												
4819	1775	1640	29M	·5267	20·4483	19·395	**1718**	4	6	Ap	18	·97	1	My	18	·51	3	Je	17	·04	4	Jl	16	·57	6	Au	15○	·10
4820	1776	1641	29M	·7855	9·5566	15·552	**1719**	5	4	Ap	8	·34	5	My	7	·87	7	Je	6	·40	1	Jl	5	·93	3	Au	4○	·46
4821	1777	1642	29M	·0442	28·1955	13·685	**1720**	6	3	Ap	26	·24	4	My	25	·77	6	Je	24	·30	7	Jl	23●	·83	2	Au	22	·36
4822	1778	1643	29M	·3030	17·3038	9·842	**1721**	1	7	Ap	15	·61	2	My	15	·14	3	Je	13○	·67	5	Jl	13●	·20	6	Au	11	·73
4823	1779	1644	29M	·5618	6·4121	6·000	**1722**	2	4	Ap	4	·97	6	My	4	·50	1	Je	3○	·03	2	Jl	2	·57	5	Au	30	·63
																					4	Au	1	·10				
4824	1780	1645	29M	·8205	25·0510	4·133	**1723**	3	3	Ap	23	·87	5	My	23●	·40	6	Je	21	·93	1	Jl	21	·46	2	Au	19	·99
4825	1781	1646	29M	·0793	14·1593	0·290	**1724**	4	1	Ap	12○	·24	2	My	11	·77	4	Je	10	·30	5	Jl	9	·83	7	Au	8	·36
4826	1782	1647	29M	·3380	3·2676	24·002	**1725**	6	5	Ap	1○	·61	7	My	1	·14	3	Je	29	·20	4	Jl	28	·73	6	Au	27	·26
													1	My	30	·67												
4827	1783	1648	29M	·5968	21·9065	22·135	**1726**	7	4	Ap	20	·50	6	My	20	·03	7	Je	18	·56	2	Jl	18	·09	3	Au	16	·63
4828	1784	1649	29M	·8555	11·0148	18·292	**1727**	1	1	Ap	9	·87	3	My	9	·40	4	Je	7	·93	6	Jl	7	·46	7	Au	5	·99
4829	1785	1650	29M	·1143	0·1231	14·450	**1728**	2	6	Mr	29	·24	2	My	27	·30	3	Je	25	·83	5	Jl	25○	·36	6	Au	23●	·89
									7	Ap	27	·77																
4830	1786	1651	29M	·3731	18·7619	12·583	**1729**	4	5	Ap	17	·13	6	My	16	·66	1	Je	15	·20	2	Jl	14○	·73	4	Au	13	·26
4831	1787	1652	29M	·6318	7·8702	8·743	**1730**	5	2	Ap	6	·50	4	My	6	·03	5	Je	4	·56	7	Jl	4●○	·09	1	Au	2	·62
																									3	S	1	·15
4832	1788	1653	29M	·8906	26·5091	6·873	**1731**	6	1	Ap	25	·40	2	My	24○	·93	4	Je	23●	·46	5	Jl	22	·99	7	Au	21	·52
4833	1789	1654	29M	·1493	15·6174	3·031	**1732**	7	5	Ap	13	·77	7	My	13○	·30	1	Je	11	·83	3	Jl	11	·36	4	Au	9	·89
4834	1790	1655	29M	·4081	4·7257	26·742	**1733**	2	3	Ap	3	·13	4	My	2○	·66	6	Je	1	·19	2	Jl	30	·26	3	Au	28	·79
																	7	Je	30	·72								
4835	1791	1656	29M	·6668	23·3646	24·876	**1734**	3	2	Ap	22●	·03	3	My	21	·56	5	Je	20	·09	6	Jl	19	·62	1	Au	18	·15
4836	1792	1657	29M	·9256	12·4729	21·033	**1735**	4	6	Ap	11	·40	7	My	10	·93	2	Je	9	·46	3	Jl	8	·99	5	Au	7	·52
4837	1793	1658	29M	·1843	1·5812	17·190	**1736**	5	3	Mr	30	·76	5	Ap	29	·30	1	Je	27	·36	2	Jl	26	·89	4	Au	25○	·42
													6	My	28	·83												
4838	1794	1659	29M	·4431	20·2201	15·323	**1737**	7	2	Ap	18	·66	4	My	18	·19	5	Je	16	·72	7	Jl	16	·25	1	Au	14●○	·78
4839	1795	1660	29M	·7019	9·3284	11·481	**1738**	1	7	Ap	8	·03	1	My	7	·56	3	Je	6	·09	4	Jl	5	·62	6	Au	4●	·15

Surya Siddhanta.

Asvina	Kartika	Margasira	Pausha	Magha	Phalguna	Chaitra
+ 147·65293	+ 177·18353	+ 206·71411	+ 236·24470	+ 265·77529	+ 295·30588	{ +324·83647 / +354·36705 }
+ 9·880	+ 11·856	+ 13·832	+ 15·808	+ 17·784	+ 19·760	{ + 21·736 / + 23·712 }

Asvina				Kartika				Margasira				Pausha				A.D.	Magha				A.D.	Phalguna				Chaitra			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
{2	S	2	·31	5	O	31	·37	6	N	29	·90	1	D	29	·43	**01**	2	Jr	27○	·96		4	F	26	·49	6	Mr	28	·02
{3	O	1	·84																										
1	S	21	·20	2	O	20	·73	4	N	19	·26	5	D	18	·80	**02**	7	Jr	17●	·33		1	F	15	·86	3	Mr	17	·39
5	S	10	·57	7	O	10	·10	1	N	8	·63	3	D	8○	·16	**03**	4	Jr	6●	·69		6	F	5	·22	7	Mr	6	·75
4	S	29	·47	6	O	29	·00	7	N	27○	·53	2	D	27	·06	**04**	3	Jr	25	·59		5	F	24	·12	6	Mr	24	·65
1	S	17	·84	3	O	17	·37	4	N	15●○	·90	6	D	15	·43	**05**	7	Jr	13	·96		2	F	12	·49	4	Mr	14	·02
6	S	7	·20	7	O	6	·73	2	N	5	·26	3	D	4	·79	**06**	5	Jr	3	·32		6	F	1	·86	1	Mr	3	·39
5	S	26○	·10	6	O	25	·63	1	N	24	·16	2	D	23	·69	**07**	4	Jr	22	·22		5	F	20	·75	7	Mr	22○	·28
2	S	15○	·47	4	O	15	·00	5	N	13	·53	7	D	13	·06	**08**	1	Jr	11	·59		3	F	10	·12	4	Mr	10●○	·65
6	S	3●○	·83	1	O	3	·36	2	N	1	·90	4	D	1	·43		5	D	30	·96	**09**	7	Jr	29	·49	2	F	28●	·02
5	S	22	·73	7	O	22	·26	1	N	20	·79	3	D	20	·32	**10**	4	Jr	18○	·85		6	F	17	·39	7	Mr	18	·92
3	S	12	·10	4	O	11	·63	6	N	10	·16	7	D	9	·69	**11**	2	Jr	8○	·22		3	F	6	·75	5	Mr	8	·28
2	O	1	·00	3	O	30	·53	5	N	29	·06	6	D	28●○	·59	**12**	1	Jr	27	·12		2	F	25	·65	4	Mr	26	·18
6	S	19	·36	7	O	18	·89	2	N	17	·43	3	D	16●	·96	**13**	5	Jr	15	·49		7	F	14	·02	1	Mr	15	·55
3	S	8	·73	5	O	8	·26	6	N	6○	·79	1	D	6	·32	**14**	2	Jr	4	·85		4	F	3	·38	5	Mr	4	·91
2	S	27	·63	4	O	27○	·16	5	N	25	·69	7	D	25	·22	**15**	1	Jr	23	·75		3	F	22	·28	4	Mr	23	·81
7	S	17	·00	1	O	16○	·53	3	N	15	·06	4	D	14	·59	**16**	6	Jr	13	·12		7	F	11	·65	2	Mr	12	·18
4	S	5	·36	5	O	4●	·89	7	N	3	·42	1	D	2	·95	**17**	3	Jr	1	·49		5	Jr	31	·02	6	Mr	1○	·55
3	S	24	·26	4	O	23	·79	6	N	22	·32	7	D	21	·85	**18**	2	Jr	20	·38		3	F	18○	·91	5	Mr	20	·44
7	S	13●	·63	2	O	13	·16	3	N	11	·69	5	D	11	·22	**19**	6	Jr	9	·75		1	F	8●○	·28	2	Mr	9	·81
{4	S	2	·99	1	N	1	·06	2	N	30	·59	4	D	30	·12	**20**	5	Jr	28●	·65		7	F	27	·18	1	Mr	27	·71
{6	O	2	·53																										
3	S	20	·89	5	O	20	·42	6	N	18	·95	1	D	18○	·48	**21**	3	Jr	17	·01		4	F	15	·55	6	Mr	17	·08
1	S	10	·26	2	O	9	·79	4	N	8	·32	5	D	7○	·85	**22**	7	Jr	6	·38		1	F	4	·91	3	Mr	6	·44
7	S	29	·16	1	O	28	·69	3	N	27○	·22	4	D	26	·75	**23**	6	Jr	25	·28		7	F	23	·01	2	Mr	25	·34
4	S	18	·52	6	O	18	·05	7	N	16	·59	2	D	16	·12	**24**	3	Jr	14	·65		5	F	13	·18	6	Mr	13	·71
1	S	6	·89	3	O	6○	·42	4	N	4	·95	6	D	4	·48	**25**	1	Jr	3	·01		2	F	1	·54	4	Mr	3	·07
7	S	25○	·79	2	O	25	·32	3	N	23	·85	5	D	23	·38	**26**	6	Jr	21	·91		1	F	20	·44	2	Mr	21○	·97
5	S	15○	·16	6	O	14	·69	1	N	13	·22	2	D	12	·75	**27**	4	Jr	11	·28		5	F	9	·81	7	Mr	11	·34
2	S	4●	·52	4	O	4	·05	5	N	2	·58	7	D	2	·11		1	D	31	·64	**28**	3	Jr	30○	·18	4	F	28	·71
1	S	22	·42	2	O	21	·95	4	N	20	·48	6	D	20	·01	**29**	7	Jr	18○	·54		2	F	17	·07	3	Mr	18	·60
5	S	11	·79	7	O	11	·32	1	N	9	·85	3	D	9	·38	**30**	4	Jr	7○	·91		6	F	6	·44	7	Mr	7	·97
4	S	30	·68	6	O	30	·22	7	N	28	·75	2	D	28●	·28	**31**	3	Jr	26	·81		5	F	25	·34	6	Mr	26	·87
2	S	20	·05	3	O	19	·58	5	N	18○	·11	6	D	17●	·64	**32**	1	Jr	16	·17		2	F	14	·70	4	Mr	15	·24
6	S	8	·42	7	O	7	·95	2	N	6○	·48	4	D	6	·01	**33**	5	Jr	4	·54		7	F	3	·07	1	Mr	4	·60
5	S	27	·32	6	O	26○	·85	1	N	25	·38	2	D	24	·91	**34**	4	Jr	23	·44		5	F	21	·97	7	Mr	23	·50
2	S	16	·68	4	O	16	·21	5	N	14	·74	7	D	14	·28	**35**	1	Jr	12	·81		3	F	11	·34	4	Mr	12○	·87
7	S	6○	·05	1	O	5●	·58	3	N	4	·11	4	D	3	·64	**36**	6	Jr	2	·17		7	Jr	31	·70	2	Mr	1○	·23
5	S	23	·95	7	O	23	·48	2	N	22	·01	3	D	21	·54	**37**	5	Jr	20	·07		6	F	18○	·60	1	Mr	20	·13
3	S	13	·32	4	O	12	·85	6	N	11	·38	7	D	10	·91	**38**	2	Jr	9	·44		3	F	7	·97	5	Mr	9	·50
{7	S	2	·68	3	O	31	·74	5	N	30	·27	6	D	29○	·80	**39**	1	Jr	28	·34		2	F	26	·87	4	Mr	28	·40
{2	O	2	·21																										

	Vaisakha	Jyeshta	Ashada	Sravana	Bhadrapada
⊙'s Anom col. 6		+ 29·53059	+ 59·06117	+ 88·59176	+ 118·12235
☾'s Anom col. 7		+ 1·976	+ 3·952	+ 5·928	+ 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year.		First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
			Month and day A.D.	Fraction of day.					Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
4840	1796	1661	29M	·9606	27·9673	9·614	**1739**	2	5	Ap	26	·93	7	My	26	·46	1	Je	24ↄ	·99	3	Jl	24	·52	5	Au	23	·05
4841	1797	1662	29M	·2194	17·0756	5·771	**1740**	3	3	Ap	15	·29	4	My	14	·82	6	Je	13ↄ	·36	7	Jl	12	·89	2	Au	11	·42
4842	1798	1663	29M	·4781	6·1839	1·929	**1741**	5	7	Ap	4	·66	2	My	4	·19	3	Je	2●	·72	5	Jl	2	·25	1	Au	30	·31
																					6	Jl	31	·78				
4843	1799	1664	29M	·7369	24·8228	0·062	**1742**	6	6	Ap	23ↄ	·56	1	My	23●	·09	2	Je	21	·62	4	Jl	21	·15	5	Au	19	·68
4844	1800	1665	29M	·9956	13·9311	23·774	**1743**	7	3	Ap	12ↄ	·93	5	My	12	·46	6	Je	10	·99	1	Jl	10	·52	3	Au	9	·05
4845	1801	1666	29M	·2544	3·0394	19·931	**1744**	1	1	Ap	1○	·29	2	Ap	30	·82	4	My	30	·35	7	Jl	28	·42	1	Au	26	·95
																	5	Je	28	·88								
4846	1802	1667	29M	·5132	21·6783	18·064	**1745**	3	7	Ap	20	·19	1	My	19	·72	3	Je	18	·25	4	Jl	17	·78	6	Au	16	·31
4847	1803	1668	29M	·7719	10·7866	14·221	**1746**	4	4	Ap	9	·56	6	My	9	·09	7	Je	7	·62	2	Jl	7	·15	3	Au	5○	·68
4848	1804	1669	30M	·0307	29·4254	12·355	**1747**	5	3	Ap	28	·46	4	My	27	·99	6	Je	26	·52	1	Jl	26○	·05	2	Au	24●	·58
4849	1805	1670	29M	·2894	18·5337	8·512	**1748**	6	7	Ap	16	·82	2	My	16	·35	3	Je	14	·88	5	Jl	14●○	·41	6	Au	12	·94
4850	1806	1671	29M	·5482	7·6420	4·669	**1749**	1	5	Ap	6	·19	6	My	5	·72	1	Je	4ↄ	·25	2	Jl	3	·78	4	Au	2	·31
																									5	Au	31	·84
4851	1807	1672	29M	·8069	26·2809	2·802	**1750**	2	4	Ap	25	·09	5	My	24ↄ	·62	7	Je	23	·15	1	Jl	22	·68	3	Au	21	·21
4852	1808	1673	30M	·0657	15·3892	26·514	**1751**	3	1	Ap	14	·45	2	My	13●○	·98	4	Je	12	·52	6	Jl	12	·05	7	Au	10	·58
4853	1809	1674	29M	·3244	4·4975	22·671	**1752**	4	5	Ap	2	·82	7	My	2	·35	1	My	31	·88	4	Jl	29	·94	6	Au	28	·47
																	3	Je	30	·41								
4854	1810	1675	9A	·5832	23·1364	20·805	**1753**	6	4	My	2●	·72	6	Je	1	·25	7	Je	30	·78	2	Jl	30	·31	3	Au	28	·84
4855	1811	1676	9A	·8420	12·2447	16·962	**1754**	6	2	Ap	22	·09	3	My	21	·62	5	Je	20	·15	6	Jl	19	·68	1	Au	18	·21
4856	1812	1677	10A	·1007	1·3530	13·119	**1755**	4	6	Ap	11	·45	7	My	10	·98	4	Jl	9	·04	5	Au	7	·58	7	S	6●○	·11
													2	Je	9	·51												
4857	1813	1678	9A	·3595	19·9919	11·252	**1756**	5	5	Ap	29	·35	6	My	28	·88	1	Je	27	·41	2	Jl	26	·94	4	Au	25	·47
4858	1814	1679	9A	·6182	9·1002	7·410	**1757**	7	2	Ap	18	·72	4	My	18	·25	5	Je	16	·78	7	Jl	16○	·31	1	Au	14	·84
4859	1815	1680	9A	·8770	27·7391	5·543	**1758**	1	1	My	7	·62	3	Je	6	·15	4	Jl	5○	·68	6	Au	4	·21	7	S	2	·74
4860	1816	1681	10A	·1357	16·8474	1·700	**1759**	2	5	Ap	26	·98	7	My	26	·51	2	Je	25	·04	3	Jl	24	·57	5	Au	23	·10
4861	1817	1682	9A	·3945	5·9557	25·412	**1760**	3	3	Ap	15	·35	4	My	14○	·88	6	Je	13●	·41	7	Jl	12	·94	4	S	10	·00
																					2	Au	11	·47				
4862	1818	1683	9A	·6533	24·5946	23·545	**1761**	5	2	My	4○	·25	3	Je	2●	·78	5	Jl	2	·31	6	Jl	31	·84	1	Au	30	·37
4863	1819	1684	9A	·9120	13·7029	19·703	**1762**	6	6	Ap	23●○	·61	1	My	23	·14	2	Je	21	·68	4	Jl	21	·21	5	Au	19	·74
4864	1820	1685	10A	·1708	2·8112	15·860	**1763**	7	3	Ap	12●	·98	5	My	12	·51	1	Jl	10	·57	3	Au	9	·10	4	S	7	·63
													7	Je	11	·04												
4865	1821	1686	9A	·4295	21·4500	13·993	**1764**	1	2	Ap	30	·88	4	My	30	·41	5	Je	28	·94	7	Jl	28	·47	2	Au	27○	·00
4866	1822	1687	9A	·6883	10·5583	10·150	**1765**	3	7	Ap	20	·25	1	My	19	·78	3	Je	18	·31	4	Jl	17	·84	6	Au	16ↄ	·37
4867	1823	1688	9A	·9470	29·1972	8·284	**1766**	4	6	My	9	·14	7	Je	7	·67	2	Jl	7	·20	3	Au	5○	·74	5	S	4	·27
4868	1824	1689	10A	·2058	18·3055	4·441	**1767**	5	3	Ap	28	·51	5	My	28	·04	6	Je	26	·57	1	Jl	26	·10	2	Au	24	·63
4869	1825	1690	9A	·4646	7·4138	0·598	**1768**	6	7	Ap	16	·88	2	My	16	·41	3	Je	14○	·94	5	Jl	14●	·47	1	S	11	·53
																					7	Au	13	·00				
4870	1826	1691	9A	·7233	26·0527	26·286	**1769**	1	6	My	5	·78	1	Je	4●ↄ	·31	2	Jl	3	·84	4	Au	2	·37	5	Au	31	·90
4871	1827	1692	9A	·9821	15·1610	22·443	**1770**	2	4	Ap	25	·14	5	My	24●	·67	7	Je	23	·20	1	Jl	22	·73	3	Au	21	·26
4872	1828	1693	10A	·2408	4·2693	18·600	**1771**	3	1	Ap	14○	·51	3	My	14	·04	4	Je	12	·57	7	Au	10	·63	2	S	9	·16
																	6	Jl	12	·10								
4873	1829	1694	9A	·4996	22·9082	16·734	**1772**	4	7	My	2	·41	1	My	31	·94	3	Je	30	·47	5	Jl	30	·00	6	Au	28	·53
4874	1830	1695	9A	·7583	12·0165	12·891	**1773**	6	4	Ap	21	·77	6	My	21	·30	7	Je	19	·84	2	Jl	19	·37	3	Au	17	·90
4875	1831	1696	10A	·0171	1·1248	9·048	**1774**	7	2	Ap	11	·14	5	Je	9	·20	6	Jl	8	·73	1	Au	7	·26	2	S	5●	·79
									3	My	10	·67																
4876	1832	1697	10A	·2758	19·7637	7·181	**1775**	1	1	Ap	30	·04	2	My	29	·57	4	Je	28	·10	5	Jl	27○	·63	7	Au	26●	·16
4877	1833	1698	9A	·5346	8·8720	3·339	**1776**	2	5	Ap	18	·41	6	My	17	·94	1	Je	16	·47	3	Jl	16ↄ	·00	4	Au	14	·53
																									6	S	13	·06
4878	1834	1699	9A	·7934	27·5109	1·472	**1777**	4	4	My	7	·30	5	Je	5	·83	7	Jl	5●○	·36	1	Au	3	·90	3	S	2	·43
4879	1835	1700	10A	·0521	16·6192	25·184	**1778**	5	1	Ap	26	·67	3	My	26	·20	4	Je	24	·73	6	Jl	24	·26	7	Au	22	·79
4880	1836	1701	10A	·3109	5·7275	21·341	**1779**	6	6	Ap	16	·04	7	My	15ↄ	·57	2	Je	14	·10	3	Jl	13	·63	6	S	10	·69
																					5	Au	12	·16				

Surya Siddhanta.

Asvina				Kartika				Margasira				A.D.	Pausha				A.D.	Magha				Phalguna				Chaitra			
+ 147·65293 + 9·880				+ 177·18353 + 11·856				+ 206·71411 + 13·832					+ 236·24470 + 15·808					+ 265·77529 + 17·784				+ 295·30588 + 19·760				+324·83647 +354·36705 + 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
6	S	21	·58	1	O	21	·11	2	N	19	·64		4	D	19●○	·17	**40**	5	Jr	17	·70	7	F	16	.23	1	Mr	16	·76
3	S	9	·95	5	O	9	·48	7	N	8	·01		1	D	7○	·54	**41**	3	Jr	6	·07	4	F	4	·60	6	Mr	6	·13
2	S	28	·84	4	O	28	·38	5	N	26●	·91		7	D	26	·44	**42**	1	Jr	24	·97	3	F	23	·50	5	Mr	25	·03
7	S	18	·21	1	O	17○	·74	3	N	16	·27		4	D	15	·80	**43**	6	Jr	14	·33	7	F	12	·86	2	Mr	14	·40
4	S	7	·58	6	O	7○	·11	7	N	5	·64		2	D	5	·17	**44**	3	Jr	3	·70	5	F	2	·23	6	Mr	2	·76
3	S	25●○	·48	5	O	25	·01	6	N	23	·54		1	D	23	·07	**45**	2	Jr	21	·60	4	F	20	·13	5	Mr	21●	·66
7	S	14	·84	2	O	14	·37	3	N	12	·91		5	D	12	·44	**46**	6	Jr	10	·97	1	F	9○	·50	3	Mr	11●	·03
5	S	4	·21	6	O	3	·74	1	N	2	·27		2	D	1	·80		4	D	31	·33 **47**	5	Jr	29ↄ	·86	7	F	28	·39
																										1	Mr	29	·92
4	S	23	·11	5	O	22	·64	7	N	21	·17		1	D	20	·70	**48**	3	Jr	19ↄ	·23	4	F	17	·76	6	Mr	18	·29
1	S	11	·48	3	O	11	·01	4	N	9	·54		6	D	9	·07	**49**	7	Jr	7	·60	2	F	6	·13	3	Mr	7	·66
7	S	30	·37	1	O	29	·90	3	N	28ↄ	·43		4	D	27●	·96	**50**	6	Jr	26	·50	1	F	25	·03	2	Mr	26	·56
4	S	19	·74	6	O	19	·27	7	N	17○	·80		2	D	17	·33	**51**	3	Jr	15	·86	5	F	14	·39	6	Mr	15	·92
2	S	9	·11	3	O	8	·64	5	N	7○	·17		6	D	6	·70	**52**	1	Jr	5	·23	2	F	3	·76	4	Mr	4	·29
1	O*	8	·00	2	N	6●	·54	4	D	6	·07	**53**	5	Jr	4	·60		7	F	3	·13	1	Mr	4	·66	3	Ap	3○	·19
5	S	27○	·37	6	O	26●	·90	1	N	25	·43		2	D	24	·96	**54**	4	Jr	23	·49	6	F	22	·02	7	Mr	23ↄ	·56
2	S	16ↄ	·74	4	O	16	·27	5	N	14	·80		7	D	14	·33	**55**	1	Jr	12	·86	3	F	11	·39	4	Mr	12ↄ	·92
1	O	5	·64	3	N	4	·17	4	D	3	·70	**56**	6	Jr	2	·23		7	Jr	31	·76	2	Mr	1●	·29	3	Mr	30	·82
6	S	24	·00	7	O	23	·53	2	N	22	·06		3	D	21	·60	**57**	5	Jr	20ↄ	·13	6	F	18	·66	1	Mr	20	·19
3	S	13	·37	6	N	11	·43	7	D	10	·96	**58**	2	Jr	9ↄ	·49		4	F	8	·02	5	Mr	9	·55	7	Ap	8	·08
4	O	12	·90																										
2	O	2	·27	3	O	31	·80	5	N	30	·33		6	D	29●ↄ	·86	**59**	1	Jr	28	·39	2	F	26	·92	4	Mr	28	·45
6	S	21	·64	1	O	21	·17	2	N	19	·70		4	D	19	·23	**60**	5	Jr	17	·76	7	F	16	·29	1	Mr	16	·82
5	O	9	·53	7	N	8ↄ	·06	1	D	7	·59	**61**	3	Jr	6	·12		4	F	4	·66	6	Mr	6	·19	7	Ap	4	·72
2	S	28	·90	4	O	28ↄ	·43	5	N	26	·96		7	D	26	·49	**62**	2	Jr	25	·02	3	F	23	·55	5	Mr	25	·08
7	S	18	·27	1	O	17●ↄ	·80	3	N	16	·33		4	D	15	·86	**63**	6	Jr	14	·39	7	F	12	·92	2	Mr	14	·45
6	O	7●	·16	7	N	5	·70	2	D	5	·23	**64**	3	Jr	3	·76		5	F	2	·29	6	Mr	2○	·82	1	Ap	1●	·35
3	S	25	·53	5	O	25	·06	6	N	23	·59		1	D	23	·12	**65**	2	Jr	21	·65	4	F	20ↄ	·18	5	Mr	21	·72
7	S	14	·90	2	O	14	·43	3	N	12	·96		5	D	12	·49	**66**	7	Jr	11	·02	1	F	9●○	·55	3	Mr	11	·08
																										4	Ap	9	·61
6	O	3	·80	1	N	2	·33	2	D	1	·86		4	D	31	·39	**67**	5	Jr	29●	·92	7	F	28	·45	1	Mr	29	·98
4	S	23	·16	5	O	22	·69	[illegible]	N	21	·22		1	D	20ↄ	·76	**68**	3	Jr	19	·29	4	F	17	·82	6	Mr	18	·35
3	O	11	·06	4	N	9	·59	6	D	9ↄ	·12	**69**	7	Jr	7●	·65		2	F	6	·18	3	Mr	7	·71	5	Ap	6	·24
7	S	30	·43	1	O	29	·96	3	N	28ↄ	·49		5	D	28	·02	**70**	6	Jr	26	·55	1	F	25	·08	2	Mr	26	·61
4	S	19	·80	6	O	19	·33	7	N	17●	·86		2	D	17	·39	**71**	3	Jr	15	·92	5	F	14	·45	6	Mr	15	·98
3	O	8ↄ	·69	5	N	7	·22	6	D	6	·75	**72**	1	Jr	5	·28		2	F	3	·82	4	Mr	4	·35	5	Ap	2ↄ	·88
1	S	27ↄ	·06	2	O	26●	·59	4	N	25	·12		5	D	24	·65	**73**	7	Jr	23	·18	1	F	21	·71	3	Mr	23●○	·24
5	S	16ↄ	·43	6	O	15	·96	1	N	14	·49		3	D	14	·02	**74**	4	Jr	12	·55	6	F	11	·08	7	Mr	12●	·61
4	O	5	·32	5	N	3	·86	7	D	3	·39	**75**	1	Jr	1	·92		3	Jr	31○	·45	4	Mr	1	·98	6	Mr	31	·51
1	S	24	.69	3	O	24	·22	4	N	22	·75		6	D	22	·28	**76**	7	Jr	20●○	·81	2	F	19	·34	3	Mr	19	·88
7	O	12	·59	2	N	11	·12	3	D	10	·65	**77**	5	Jr	9ↄ	·18		6	F	7	·71	1	Mr	9	·24	2	Ap	7	·77
4	O	1	·96	6	O	31	·49	1	N	30	·02		2	D	29	·55	**78**	4	Jr	28	·08	5	F	26	·61	7	Mr	28	·14
2	S	21	·32	3	O	20	·85	5	N	19ↄ	·38		6	D	18	·92	**79**	1	Jr	17	·45	2	F	15	·98	4	Mr	17	·51
1	O	10	·22	2	N	8ↄ	·75	4	D	8	·28	**80**	5	Jr	6	·81		7	F	5	·34	1	Mr	5	·87	3	Ap	4	·40

* In this year **A.D. 1752**, the **New Style** was introduced by an Act of the British Parliament and **11** days were dropped out, that is, the next day after Wednesday, **2** September **1752** was declared to be Thursday, **14** September **1752**. Hence the New-Moon after **28** August **1752** which would ordinarily have occurred on **26** September **1752** actually occurred on **8** October **1752**.

TABLE X—

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
									⊙'s Anom col. 6				+ 29·53029				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
4881	1837	1702	9A	·5696	24·3664	19·474	**1780**	7	4	My	30○	·94	6	Je	2	·47	1	Jl	2	·00	2	Jl	31	·53	4	Au	30	·06
4882	1838	1703	9A	·8284	13·4747	15·632	**1781**	2	2	Ap	23	·30	3	My	22	·83	5	Je	21	·36	6	Jl	20	·89	1	Au	19	·42
4883	1839	1704	10A	·0871	2·5830	11·789	**1782**	3	6	Ap	12	·67	1	My	12	·20	4	Jl	10	·26	5	Au	8	·79	7	S	7ↄ	·32
													2	Je	10	·73												
4884	1840	1705	10A	·3459	21·2218	9·922	**1783**	4	5	My	1	·57	7	My	31	·10	1	Je	29	·63	3	Jl	29	·16	4	Au	27○	·69
4885	1841	1706	9A	·6047	10·3301	6·079	**1784**	5	2	Ap	19	·93	4	My	19	·46	6	Je	18	·00	7	Jl	17	·53	2	Au	16●○	·06
4886	1842	1707	9A	·8634	28·9690	4·213	**1785**	7	1	My	8	·83	3	Je	7	·36	4	Jl	6	·89	6	Au	5●	·42	7	S	3	·95
4887	1843	1708	10A	·1222	18·0773	0·370	**1786**	1	6	Ap	28	·20	7	My	27	·73	2	Je	26ↄ	·26	3	Jl	25	·79	5	Au	24	·32
4888	1844	1709	10A	·3809	7·1856	24·082	**1787**	2	3	Ap	17	·57	5	My	17	·10	6	Je	15ↄ	·63	1	Jl	15	·16	4	S	12	·22
																					2	Au	13	·69				
4889	1845	1710	9A	·6397	25·8245	22·215	**1788**	3	2	My	5	·46	3	Je	3●	·99	5	Jl	3	·52	7	Au	2	·06	1	Au	31	·59
4890	1846	1711	9A	·8984	14·9328	18·372	**1789**	5	6	Ap	24○	·83	1	My	24	·36	2	Je	22	·89	4	Jl	22	·42	5	Au	20	·95
4891	1847	1712	10A	·1572	4·0411	14·529	**1790**	6	4	Ap	14○	·20	5	My	13	·73	7	Je	12	·26	3	Au	10	·32	4	S	8	·85
																	1	Jl	11	·79								
4892	1848	1713	10A	·4160	12·6800	2·663	**1791**	7	3	My	3	·10	4	Je	1	·63	6	Jl	1	·16	7	Jl	30	·69	2	Au	29	·22
4893	1849	1714	9A	·6747	11·7883	8·820	**1792**	1	7	Ap	21	·46	1	My	20	·99	3	Je	19	·52	5	Jl	19	·05	6	Au	17	·58
4894	1850	1715	9A	·9335	0·8966	4·977	**1793**	3	4	Ap	10	·83	7	Je	8	·89	2	Jl	8	·42	3	Au	6ↄ	·95	5	S	5●	·48
									6	My	10	·36																
4895	1851	1716	10A	·1922	19·5355	3·110	**1794**	4	3	Ap	29	·73	5	My	29	·26	6	Je	27	·79	1	Jl	27○	·32	2	Au	25●	·85
4896	1852	1717	10A	·4510	8·6438	26·822	**1795**	5	1	Ap	19	·09	2	My	18	·62	4	Je	17	·16	5	Jl	16●ↄ	·69	7	Au	15	·22
																									1	S	13	·75
4897	1853	1718	9A	·7097	27·2827	24·955	**1796**	6	6	My	6	·99	1	Je	5	·52	3	Jl	5●	·05	4	Au	3	·58	6	S	2	·11
4898	1854	1719	9A	·9685	16·3910	21·113	**1797**	1	4	Ap	26	·36	5	My	25ↄ	·89	7	Je	24	.42	1	Jl	23	·95	3	Au	22	·48
4899	1855	1720	10A	·2272	5·4993	17·270	**1798**	2	1	Ap	15	·73	3	My	15ↄ	·26	4	Je	13	·79	6	Jl	13	·32	2	S	10	·38
																					7	Au	11	·85				
4900	1856	1721	10A	·4860	24·1382	15·403	**1799**	3	7	My	4●	·62	2	Je	3	·15	3	Jl	2	·68	5	Au	1	·22	6	Au	30	·75
4901	1857	1722	10A	·7448	13·2464	11·563	**1800**	4	4	Ap	23●	·99	6	My	23	·52	1	Je	22	·05	2	Jl	21	·58	4	Au	20	·11
4902	1858	1723	11A	·0035	2·3548	7·720	**1801**	5	2	Ap	13●	·36	3	My	12	·89	6	Jl	10	·95	1	Au	9	·48	3	S	8○	·01
													5	Je	11	·42												
4903	1859	1724	11A	·2623	20·9936	5·854	**1802**	6	1	My	2	·26	2	My	31	·79	4	Je	30	·32	5	Jl	29	·85	7	Au	28●○	·38
4904	1860	1725	11A	·5210	10·1019	2·011	**1803**	7	5	Ap	21	·62	7	My	21	·15	1	Je	19	·68	3	Jl	19	·21	4	Au	17●	·74
4905	1861	1726	10A	·7798	28·7408	0·144	**1804**	1	4	My	9	·52	6	Je	8	·05	7	Jl	7○	·58	2	Au	6	·11	3	S	4	·64
4906	1862	1727	11A	·0385	17·8491	23·856	**1805**	3	1	Ap	28	·89	3	My	28	·42	4	Je	26●○	·95	6	Jl	26	·48	1	Au	25	·01
4907	1863	1728	11A	·2973	6·9574	20·013	**1806**	4	6	Ap	18	·25	7	My	17	·78	2	Je	16	·32	3	Jl	15	·85	6	S	12	·91
																					5	Au	14	·38				
4908	1864	1729	11A	·5561	25·5963	18·147	**1807**	5	5	My	7○	·15	6	Je	5●	·68	1	Jl	5	·21	2	Au	3	·74	4	S	2	·27
4909	1865	1730	10A	·8148	14·7046	14·304	**1808**	6	2	Ap	25○	·52	4	My	25	·05	5	Je	23	·58	7	Jl	23	·11	1	Au	21	·64
4910	1866	1731	11A	·0736	3·8129	10·461	**1809**	1	6	Ap	14○	·89	1	My	14	·42	2	Je	12	·95	6	Au	11	·01	7	S	9	·54
																	4	Jl	12	·48								
4911	1867	1732	11A	·3323	22·4518	8·594	**1810**	2	5	My	3	·78	7	Je	2	·31	1	Jl	1	·84	3	Jl	31	·37	4	Au	29	·91
4912	1868	1733	11A	·5911	11·5601	4·752	**1811**	3	3	Ap	23	·15	4	My	22	·68	6	Je	21	·21	7	Jl	20	·74	2	Au	19○	·27
4913	1869	1734	10A	·8498	0·6684	0·909	**1812**	4	7	Ap	11	·52	3	Je	9	·58	5	Jl	9	·11	6	Au	7○	·64	1	S	6	·17
									2	My	11	·05																
4914	1870	1735	11A	·1086	19·3073	26·597	**1813**	6	6	Ap	30	·42	7	My	29	·95	2	Je	28	·48	4	Jl	28○	·00	5	Au	26	·54
4915	1871	1736	11A	·3674	8·4156	22·754	**1814**	7	3	Ap	19	·78	5	My	19	·31	6	Je	17	·84	1	Jl	17●	·37	2	Au	15	·90
																									4	S	14	·44
4916	1872	1737	11A	·6261	27·0545	20·887	**1815**	1	2	My	8	·68	4	Je	7○	·21	5	Jl	6●	·74	7	Au	5	·27	1	S	3	·80
4917	1873	1738	10A	·8849	16·1628	17·044	**1816**	2	7	Ap	27	·05	1	My	26○	·58	3	Je	25	·11	4	Jl	24	·64	6	Au	23	·17
4918	1874	1739	11A	·1336	5·2711	13·202	**1817**	4	4	Ap	16	·41	5	My	15●	·94	7	Je	14	·48	2	Jl	14	·01	5	S	11	·07
																					3	Au	12	·54				
4919	1875	1740	11A	·4024	23·9099	11·335	**1818**	5	3	My	5●	·31	4	Je	3	·84	6	Jl	3	·37	7	Au	1	·90	2	Au	31	·43

Surya Siddhanta.

+ 147·65293				+ 177·18353				+ 206·71411					+ 236·24470					+ 265·77529				+ 295·30588				{ +324·83647 / +354·36705			
+ 9·880				+ 11·856				+ 13·832					+ 15·808					+ 17·784				+ 19·760				{ +21·736 / +23·712			
Asvina				**Kartika**				**Margasira**				**A.D.**	**Pausha**				**A.D.**	**Magha**				**Phalguna**				**Chaitra**			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5	S	28	·59	7	O	28○	·12	1	N	26	·65		3	D	26	·18	**81**	4	Jr	24	·71	6	F	23	·24	7	Mr	24	·77
2	S	17	·96	4	O	17●	·49	6	N	16	·02		7	D	15	·55	**82**	2	Jr	14	·08	3	F	12	·61	5	Mr	14○	·14
1	O	6●	·85	3	N	5	·38	4	D	4	·91	**83**	6	Jr	3	·44		7	F	1	·98	2	Mr	3○	·51	4	Ap	2	·04
6	S	26	·22	7	O	25	·75	2	N	24	·28		3	D	23	·81	**84**	5	Jr	22	·34	6	F	20○	·87	1	Mr	21	·40
3	S	14	·59	5	O	14	·12	6	N	12	·65		1	D	12	·18	**85**	2	Jr	10	·71	4	F	9●	·24	{ 5	Mr	10	·77
																										{ 7	Ap	9	·30
2	O	3	·48	4	N	2	·02	5	D	1	·55		7	D	31○	·08	**86**	1	Jr	29●	·61	3	F	28	·14	4	Mr	29	·67
6	S	22	·85	1	O	22	·38	2	N	20	·91		4	D	20○	·44	**87**	5	Jr	18	·97	7	F	17	·50	2	Mr	19	·04
5	O	11	·75	7	N	10	·28	1	D	9○	·81	**88**	3	Jr	8	·34		4	F	6	·87	6	Mr	7	·40	7	Ap	5	·93
3	S	30	·12	4	O	29	·65	6	N	28	·18		7	D	27	·71	**89**	2	Jr	26	·24	3	F	24	·77	5	Mr	26	·30
7	S	19	·48	2	O	19○	·01	3	N	17●	·54		5	D	17	·08	**90**	6	Jr	15	·61	1	F	14	·14	2	Mr	15	·67
6	O	8○	·38	7	N	6	·91	2	D	6	·44	**91**	3	Jr	4	·97		5	F	3	·50	7	Mr	5	·03	1	Ap	3●○	·56
3	S	27●○	·75	5	O	27	·28	6	N	25	·81		1	D	25	·34	**92**	2	Jr	23	·87	4	F	22	·40	5	Mr	22	·93
1	S	16●	·12	2	O	15	·65	4	N	14	·18		5	D	13	·71	**93**	7	Jr	12	·24	1	F	10○	·77	3	Mr	12●	·30
7	O	5	·01	1	N	3	·54	3	D	3	·07	**94**	4	Jr	1	·60		6	Jr	31○	·14	7	Mr	1	·67	2	Mr	31	·20
4	S	24	·38	5	O	23	·91	7	N	22	·44		1	D	21	·97	**95**	3	Jr	20●○	·50	5	F	19	·03	6	Mr	20	·56
3	O	13	·28	4	N	11	·81	6	D	11	·34	**96**	7	Jr	9●	·87		2	F	8	·40	3	Mr	8	·93	5	Ap	7	·46
7	O	1	·64	2	O	31	·18	3	N	29○	·71		5	D	29	·24	**97**	6	Jr	27	·77	1	F	26	·30	2	Mr	27	·33
5	S	21	·01	6	O	20	·54	1	N	19○	·07		2	D	18	·60	**98**	4	Jr	17	·13	5	F	15	·66	7	Mr	17	·20
3	O	9	·91	5	N	8●○	·44	6	D	7	·97	**99**	1	Jr	6	·50		3	F	5	·03	4	Mr	6	·56	6	Ap	5	·09
1	S	29	·28	2	O	28	·81	4	N	27	·34	**18**	5	D	26	·87	**00**	7	Jr	25	·40	1	F	23	·93	3	Mr	25○	·46
5	S	18○	·64	7	O	18	·17	1	N	16	·70		3	D	16	·24	**01**	4	Jr	14	·77	6	F	13	·30	7	Mr	14○	·83
4	O	7	·54	6	N	6	·07	7	D	5	·60	**02**	2	Jr	4	·13		3	F	2	·66	5	Mr	4○	·19	6	Ap	2	·72
1	S	26	·91	3	O	26	·44	4	N	24	·97		6	D	24	·50	**03**	1	Jr	23	·03	2	F	21	·56	4	Mr	23	·09
6	S	16	·28	7	O	15	·81	2	N	14	·34		3	D	13	·87	**04**	5	Jr	12○	·40	6	F	10●	·93	{ 1	Mr	11	·46
																										{ 2	Ap	9	·99
5	O	4	·17	6	N	2	·70	1	D	2	·23		2	D	31○	·76	**05**	4	Jr	30	·30	5	F	28	·83	7	Mr	30	·36
2	S	23	·54	4	O	23	·07	5	N	21	·60		7	D	21○	·18	**06**	1	Jr	19	·66	3	F	18	·19	4	Mr	19	·72
1	O	12	·44	2	N	10	·97	4	D	10●	·50	**07**	6	Jr	9	·03		7	F	7	·56	2	Mr	9	·09	3	Ap	7	·62
5	O	1	·80	7	O	31○	·34	1	N	29●	·87		3	D	29	·40	**08**	4	Jr	27	·93	6	F	26	·46	7	Mr	26	·99
3	S	20	·17	4	O	19○	·70	6	N	18●	·23		7	D	17	·76	**09**	2	Jr	16	·29	3	F	14	·82	5	Mr	16	·36
2	O	9○	·07	3	N	7	·60	5	D	7	·13	**10**	6	Jr	5	·66		1	F	4	·19	2	Mr	5	·72	4	Ap	4●	·25
6	S	28	·44	7	O	27	·97	2	N	26	·50		4	D	26	·03	**11**	5	Jr	24	·56	7	F	23○	·09	1	Mr	24	·62
3	S	17	·80	5	O	17	·33	6	N	15	·86		1	D	15	·40	**12**	2	Jr	13	·93	4	F	12○	·46	5	Mr	12	·99
2	O	5	·70	4	N	4	·23	5	D	3	·76	**13**	7	Jr	2	·29		1	Jr	31●○	·82	3	Mr	2	·35	4	Mr	31	·88
7	S	25	·07	1	O	24	·60	3	N	23	·13		4	D	22	·66	**14**	6	Jr	21	·19	7	F	19	·72	2	Mr	21	·25
5	O	13	·97	7	N	12	·50	2	D	12○	·03	**15**	3	Jr	10	·56		5	F	9	·09	6	Mr	10	·62	1	Ap	9	·15
3	O	3	·33	4	N	1	·86	6	D	1○	·39		7	D	30	·92	**16**	2	Jr	29	·46	3	F	27	·99	5	Mr	28	·52
7	S	21	·70	2	O	21	·23	3	N	19●○	·76		5	D	19	·29	**17**	6	Jr	17	·82	1	F	16	·35	2	Mr	17	·88
6	O	10	·60	1	N	9●	·13	2	D	8	·66	**18**	4	Jr	7	·19		5	F	5	·72	7	Mr	7	·25	1	Ap	5○	·78
3	S	29○	·96	5	O	29	·50	7	N	28	·03		1	D	27	·56	**19**	3	Jr	26	·09	4	F	24	·62	6	Mr	26○	15

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Month	Day	Fraction	Jyeshta Week-day	Month	Day	Fraction	Ashada Week-day	Month	Day	Fraction	Sravana Week-day	Month	Day	Fraction	Bhadrapada Week-day	Month	Day	Fraction
									☉'s Anom col. 6				+ 29·53059				+ 59·06117				+ 88·59176				+ 118·12235			
									☾'s Anom col. 7				+ 1·976				+ 3·952				+ 5·928				+ 7·904			
4920	1876	1741	11A	·6611	13·0182	7·492	**1819**	6	7	Ap	24	·68	2	My	24	·21	3	Je	22	·74	5	Jl	22	·27	6	Au	20	·80
4921	1877	1742	10A	·9199	2·1265	3·649	**1820**	7	5	Ap	13	·05	{ 6	My	12	·58	2	Jl	10	·64	4	Au	9	·17	5	S	7○	·70
													{ 1	Je	11	·11												
4922	1878	1743	11A	·1787	20·7654	1·783	**1821**	2	3	My	1	·94	5	My	31	·47	7	Je	30	·00	1	Jl	29	·54	3	Au	28	·07
4923	1879	1744	11A	·4374	9·8737	25·495	**1822**	3	1	Ap	21	·31	2	My	20	·84	4	Je	19	·37	5	Jl	18○	·90	7	Au	17	·43
4924	1880	1745	11A	·6962	28·5126	23·628	**1823**	4	7	My	10	·21	1	Je	8	·74	3	Jl	8○	·27	4	Au	6	·80	6	S	5	·33
4925	1881	1746	10A	·9549	17·6209	19·785	**1824**	5	4	Ap	28	·58	6	My	28	·11	7	Je	26●○	·64	2	Jl	26	·17	3	Au	24	·70
4926	1882	1747	11A	·2137	6·7292	15·942	**1825**	7	1	Ap	17	·94	3	My	17○	·47	5	Je	16●	·00	{ 6	Jl	15	·53	2	S	12	·60
																					{ 1	Au	14	·06				
4927	1883	1748	11A	·4724	25·3681	14·076	**1826**	1	7	My	6○	·84	2	Je	5	·37	3	Jl	4	·90	5	Au	3	·43	6	S	1	·96
4928	1884	1749	11A	·7312	14·4764	10·233	**1827**	2	5	Ap	26●○	·21	6	My	25	·74	1	Je	24	·27	2	Jl	23	·80	4	Au	22	·33
4929	1885	1750	10A	·9899	3·5847	6·390	**1828**	3	2	Ap	14●	·57	4	My	14	·10	{ 5	Je	12	·64	1	Au	10	·70	3	S	9	·23
																	{ 7	Jl	12	·17								
4930	1886	1751	11A	·2487	22·2236	4·523	**1829**	5	1	My	3	·47	3	Je	2	·00	4	Jl	1	·53	6	Jl	31	·06	7	Au	29○	·59
4931	1887	1752	11A	·5075	11·3319	0·681	**1830**	6	5	Ap	22	·84	7	My	22	·37	1	Je	20	·90	3	Jl	20	·43	4	Au	18○	·96
4932	1888	1753	11A	·7662	0·4402	24·392	**1831**	7	{ 3	Ap	12	·21	6	Je	10	·27	7	Jl	9	·80	2	Au	8○	·33	3	S	6	·86
									{ 4	My	11	·74																
4933	1889	1754	11A	·0250	19·0791	22·526	**1832**	1	2	Ap	30	·10	3	My	29	·63	5	Je	28	·16	6	Jl	27●	·70	1	Au	26	·23
4934	1890	1755	11A	·2837	8·1874	18·683	**1833**	3	6	Ap	19	·47	1	My	19	·00	2	Je	17○	·53	4	Jl	17●	·06	{ 5	Au	15	·59
																									{ 7	S	14	·12
4935	1891	1756	11A	·5425	26·8263	16·816	**1834**	4	5	My	8	·37	6	Je	6○	·90	1	Jl	6	·43	2	Au	4	·96	4	S	3	·49
4936	1892	1757	11A	·8012	15·9346	12·973	**1835**	5	2	Ap	27	·74	4	My	27○	·27	5	Je	25	·80	7	Jl	25	·33	1	Au	23	·86
4937	1893	1758	11A	·0600	5·0429	9·131	**1836**	6	7	Ap	16○	·10	1	My	15	·63	{ 3	Je	13	·16	6	Au	12	·22	7	S	10	·76
																	{ 4	Jl	13	·69								
4938	1894	1759	11A	·3188	23·6819	7·264	**1837**	1	6	My	5	·00	7	Je	3	·53	2	Jl	3	·06	3	Au	1	·59	5	Au	31	·12
4939	1895	1760	11A	·5775	12·7900	3·421	**1838**	2	3	Ap	24	·37	4	My	23	·90	6	Je	22	·43	7	Jl	21	·96	2	Au	20	·49
4940	1896	1761	11A	·8363	1·8983	27·133	**1839**	3	7	Ap	13	·73	{ 2	My	13	·26	5	Jl	11	·33	6	Au	9	·86	1	S	8	·39
													{ 3	Je	11	·80												
4941	1897	1762	11A	·0950	20·5372	25·266	**1840**	4	6	My	1	·63	1	My	31	·16	2	Je	29	·69	4	Jl	29○	·22	5	Au	27●	·75
4942	1898	1763	11A	·3538	9·6455	21·424	**1841**	6	4	Ap	21	·00	5	My	20	·53	7	Je	19	·06	1	Jl	18○	·59	3	Au	17	·12
4943	1899	1764	11A	·6125	28·2844	19·557	**1842**	7	2	My	9	·90	4	Je	8	·43	5	Jl	7●○	·96	7	Au	6	·49	2	S	5	·02
4944	1900	1765	11A	·8713	17·3927	15·714	**1843**	1	7	Ap	29	·26	1	My	28	·79	3	Je	27	·32	4	Jl	26	·86	6	Au	25	·39
4945	1901	1766	11A	·1300	6·5010	11·871	**1844**	2	4	Ap	17	·63	6	My	17○	·16	7	Je	15	·69	{ 2	Jl	15	·22	5	S	12	·28
																					{ 3	Au	13	·75				
4946	1902	1767	11A	·3888	25·1399	10·004	**1845**	4	3	My	6●○	·53	5	Je	5	·06	6	Jl	4	·59	1	Au	3	·12	2	S	1	·65
4947	1903	1768	11A	·6476	14·2482	6·162	**1846**	5	7	Ap	25	·90	2	My	25	·43	3	Je	23	·96	5	Jl	23	·49	7	Au	22	·02
4948	1904	1769	11A	·9063	3·3565	2·319	**1847**	6	5	Ap	15●	·26	{ 6	My	14	·79	2	Jl	12	·85	4	Au	11	·38	5	S	9○	·92
													{ 1	Je	13	·32												
4949	1905	1770	11A	·1651	21·9954	0·452	**1848**	7	4	My	3	·16	5	Je	1	·69	7	Jl	1	·22	1	Jl	30	·75	3	Au	29○	·28
4950	1906	1771	11A	·4238	11·1037	24·164	**1849**	2	1	Ap	22	·53	3	My	22	·06	4	Je	20	·59	6	Jl	20	·12	7	Au	18●○	·65
4951	1907	1772	11A	·6826	0·2120	20·321	**1850**	3	{ 5	Ap	11	·89	1	Je	9	·96	3	Jl	9	·49	5	Au	8	·02	6	S	6	·55
									{ 7	My	11	·42																
4952	1908	1773	11A	·9413	18·8509	18·454	**1851**	4	4	Ap	30	·79	6	My	30	·32	7	Je	28○	·85	2	Jl	28	·38	3	Au	26	·91
4953	1909	1774	11A	·2001	7·9592	14·612	**1852**	5	2	Ap	19	·16	3	My	18	·69	5	Je	17○	·22	6	Jl	16	·75	{ 1	Au	15	·28
																									{ 2	S	13	·81
4954	1910	1775	11A	·4589	26·5981	12·745	**1853**	7	1	My	8	·06	2	Je	6○	·59	4	Jl	6	·12	5	Au	4	·65	7	S	3	·18
4955	1911	1776	11A	·7176	15·7064	8·902	**1854**	1	5	Ap	27○	·42	6	My	26	·95	1	Je	25	·48	3	Jl	25	·01	4	Au	23	·55
4956	1912	1777	11A	·9764	4·8147	5·060	**1855**	2	2	Ap	16○	·79	4	My	16●	·32	{ 5	Je	14	·85	1	Au	12	·91	3	S	11	·44
																	{ 7	Jl	14	·38								
4957	1913	1778	11A	·2351	23·4535	3·193	**1856**	3	1	My	4	·69	3	Je	3	·22	4	Jl	2	·75	6	Au	1	·28	7	Au	30	·81
4958	1914	1779	11A	·4939	12·5618	26·905	**1857**	5	6	Ap	24	·06	7	My	23	·59	2	Je	22	·12	3	Jl	21	·65	5	Au	20	·18
4959	1915	1780	11A	·7526	1·6701	23·062	**1858**	6	3	Ap	13	·42	{ 4	My	12	·95	1	Jl	11	·01	2	Au	9○	·54	4	S	8	·08
													{ 6	Je	11	·48												

Surya Siddhanta.

+ 147·65293				+ 177·18353				+ 206·71411					+ 236·24470					+ 265·77529				+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832					+ 15·808					+ 17·784				+ 19·760				+21·736 +23·712			
Asvina				**Kartika**				**Margasira**				**A.D.**	**Pausha**				**A.D.**	**Magha**				**Phalguna**				**Chaitra**			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
1	S	19●○	·33	2	O	18	·86	4	N	17	·39		5	D	16	·92	**20**	7	Jr	15	·45	1	F	13	·98	3	Mr	14○	·52
7	O	7	·23	1	N	5	·76	3	D	5	·29	**21**	4	Jr	3	·82		6	F	2	·35	7	Mr	3●	·88	2	Ap	2	·41
4	S	26	·60	6	O	26	·13	7	N	24	·66		2	D	24	·19	**22**	3	Jr	22○	·72	5	F	21	·25	6	Mr	22	·78
{1	S	15	.96	5	N	14	·02	6	D	13	·56		**Pausha Kshaya**				**23**	1	Jr	12○	·09	2	F	10●	·62	{4	Mr	12	·15
{3	O	15	·49																							{5	Ap	10	·68
7	O	4	·86	2	N	3	·39	3	D	2	·92	**24**	5	Jr	1○	·45		6	Jr	30	·98	1	F	29	·51	3	Mr	30	·04
5	S	23	·23	6	O	22	·76	1	N	21	·29		2	D	20●	·82	**25**	4	Jr	19	·35	5	F	17	·88	7	Mr	19	·41
4	O	12	·13	5	N	10○	·66	7	D	10	·19	**26**	1	Jr	8	·72		3	F	7	·25	4	Mr	8	·78	6	Ap	7	·31
1	O	1	·49	3	O	31○	·02	4	N	29	·55		6	D	29	·08	**27**	7	Jr	27	·62	2	F	26	·15	3	Mr	27	·68
5	S	20	·86	7	O	20○	·39	1	N	18	·92		3	D	18	·45	**28**	4	Jr	16	·98	6	F	15	·51	1	Mr	16	·04
4	O	8●	·76	6	N	7	·29	7	D	6	·82	**29**	2	Jr	5	·35		3	F	3	·88	5	Mr	5○	·41	6	Ap	3	·94
2	S	8●	·12	3	O	27	·66	5	N	26	·19		6	D	25	·72	**30**	1	Jr	24	·25	2	F	22●○	·78	4	Mr	24	·31
6	S	17	·49	1	O	17	·02	2	N	15	·55		4	D	15	·08	**31**	5	Jr	13	·61	7	F	12○	·14	1	Mr	13	·68
5	O	6	·39	6	N	4	·92	1	D	4	·45	**32**	2	Jr	2	·98		4	F	1	·51	6	Mr	2	·04	7	Mr	31	·57
2	S	24	·76	4	O	24	·29	5	N	22	·82		7	D	22○	·35	**33**	1	Jr	20	·88	3	F	19	·41	4	Mr	20	·94
1	O	13	·65	3	N	12	·18	4	D	11○	·72	**34**	6	Jr	10	.25		7	F	8	·78	2	Mr	10	·31	3	Ap	8	·84
6	O	3	·02	7	N	1	·55	2	D	1○	·08		3	D	30	·61	**35**	5	Jr	29	·14	6	F	27	·67	1	Mr	29	·20
3	S	22	·39	4	O	21	·92	6	N	20●	·45		7	D	19	·98	**36**	2	Jr	18	·51	4	F	17	·04	5	Mr	17	·57
2	O	10○	·29	3	N	8●	·82	5	D	8	·35	**37**	6	Jr	6	·88		1	F	5	·41	2	Mr	6	·94	4	Ap	5○	·47
6	S	29○	·65	1	O	29	·18	2	N	27	·71		4	D	27	·24	**38**	5	Jr	25	·78	7	F	24	·31	1	Mr	25○	·84
4	S	19○	·02	5	O	18	·55	7	N	17	·08		1	D	16	·61	**39**	3	Jr	15	·14	4	F	13	·67	6	Mr	15	·20
2	O	7	·92	4	N	6	·45	5	D	5	·98	**40**	7	Jr	4	·51		2	F	3○	·04	3	Mr	3●	·57	5	Ap	2	·10
7	S	26	·28	1	O	25	·82	3	N	24	·35		4	D	23	·88	**41**	6	Jr	22○	·41	7	F	20	·94	2	Mr	22	·47
{4	S	15	·65	7	N	13	·71	2	D	13	·24	**42**	3	Jr	11○	·77		5	F	10	·30	6	Mr	11	·84	1	Ap	10	·37
{6	O	15	·18																										
3	O	4	·55	5	N	3	·08	6	D	2	·61	**43**	1	Jr	1	·14		2	Jr	30	·67	4	Mr	1	·20	5	Mr	30	·73
7	S	23	·92	2	O	23	·45	3	N	21○	·98		5	D	21●	·51	**44**	7	Jr	20	·04	1	F	18	·57	3	Mr	19	·10
6	O	11	·81	1	N	10○	·34	2	D	9	·88	**45**	4	Jr	8	·41		5	F	6	·94	7	Mr	8	·47	2	Ap	7	·00
4	O	1	·18	5	O	30○	·71	7	N	29	·24		1	D	28	·77	**46**	3	Jr	27	·30	4	F	25	·83	6	Mr	27	·36
1	S	20	·55	3	O	20●	·08	4	N	18	·61		6	D	18	·14	**47**	7	Jr	16	·67	2	F	15	·20	3	Mr	16○	·73
7	O	9●	·45	1	N	7	·98	3	D	7	·51	**48**	5	Jr	6	·04		6	F	4	·57	1	Mr	5○	·10	2	Ap	3	·63
4	S	27●	·81	6	O	27	·34	7	N	25	·87		2	D	25	·40	**49**	3	Jr	23	·94	5	F	22●○	·47	7	Mr	24	·00
2	S	17	·18	3	O	16	·71	5	N	15	·24		6	D	14	·77	**50**	1	Jr	13	·30	2	F	11●	·83	4	Mr	13	·36
1	O	6	·08	2	N	4	·61	4	D	4	·14	**51**	5	Jr	2○	·67		7	F	1	·20	1	Mr	2	·73	3	Ap	1	·26
5	S	25	·44	6	O	24	·98	1	N	23	·51		3	D	23○	·04	**52**	4	Jr	21	·57	6	F	20	·10	7	Mr	20	·63
4	O	13	·34	5	N	11	·87	7	D	11●○	·40	**53**	1	Jr	9	·93		3	F	8	·46	5	Mr	10	·00	6	Ap	8	·53
1	O	2	·71	3	N	1	·24	4	N	30	·77		6	D	30	·30	**54**	7	Jr	28	·83	2	F	27	·36	3	Mr	28	·89
6	S	22	·08	7	O	21○	·61	2	N	20	·14		3	D	19	·67	**55**	5	Jr	18	·20	6	F	16	·73	1	Mr	18	·26
4	O	10○	·97	6	N	9	·50	1	D	9	·04	**56**	2	Jr	7	·57		4	F	6	·10	5	Mr	6	·63	7	Ap	5●○	·16
2	S	29●○	·34	3	O	28	·87	5	N	27	·40		6	D	26	·93	**57**	1	Jr	25	·46	2	F	23	·99	4	Mr	25	·52
6	S	18●	·71	1	O	18	·24	2	N	16	·77		4	D	16	·30	**58**	5	Jr	14	·83	7	F	13○	·36	1	Mr	14●	89
5	O	7	·61	7	N	6	·14	1	D	5	·67	**59**	3	Jr	4	·20		4	F	2○	·73	6	Mr	4	·26	7	Ap	2	79

TABLE X—

☉'s Anom col. 6 — Jyeshta: + 29·53059; Ashada: + 59·06117; Sravana: + 88·59176; Bhadrapada: + 118·12235

☾'s Anom col. 7 — Jyeshta: + 1·976; Ashada: + 3·952; Sravana: + 5·928; Bhadrapada: + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A. D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month	Ashada Day	Ashada Fraction	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
4960	1916	1781	12A	·0114	20·3090	21·195	**1859**	7	2	My	2	·32	3	My	31	·85	5	Je	30	·38	6	Jl	29○	·91	1	Au	28	·44
4961	1917	1782	11A	·2702	9·4173	17·352	**1860**	1	6	Ap	20	·69	1	My	20	·22	2	Je	18	·75	4	Jl	18○	·28	5	Au	16	·81
4962	1918	1783	11A	·5289	28·0562	15·487	**1861**	3	5	My	9	·58	7	Je	8	·12	1	Jl	7●	·65	3	Au	6	·18	4	S	4	·71
4963	1919	1784	11A	·7877	17·1645	11·643	**1862**	4	2	Ap	28	·95	4	My	28○	·48	6	Je	27	·01	7	Jl	26	·54	2	Au	25	·07
4964	1920	1785	12A	·0464	6·2728	7·800	**1863**	5	7	Ap	18	·32	1	My	17○	·85	3	Je	16	·38	4	Jl	15	·91	7	S	12	·97
																					6	Au	14	·44				
4965	1921	1786	11A	·3052	24·9117	5·933	**1864**	6	6	My	6●	·22	7	Je	4	·75	2	Jl	4	·28	3	Au	2	·81	5	S	1	·34
4966	1922	1787	11A	·5639	14·0200	2·091	**1865**	1	3	Ap	25	·58	5	My	25	·11	6	Je	23	·64	1	Jl	23	·18	2	Au	21	·71
4967	1923	1788	11A	·8227	3·1283	25·803	**1866**	2	7	Ap	14	·95	2	My	14	·48	5	Jl	12	·54	7	Au	11	·07	1	S	9○	·60
													4	Je	13	·01												
4968	1924	1789	12A	·0814	21·7672	23·936	**1867**	3	6	My	3	·85	1	Je	2	·38	2	Jl	1	·91	4	Jl	31	·44	5	Au	29○	·97
4969	1925	1790	11A	·3402	10·8755	20·093	**1868**	4	4	Ap	22	·22	5	My	21	·75	7	Je	20	·28	1	Jl	19	·81	3	Au	18●	·34
4970	1926	1791	11A	·5990	29·5144	16·250	**1869**	6	1	Ap	11	·58	4	Je	9	·64	6	Jl	9○	·17	7	Au	7	·70	2	S	6	·24
									3	My	11	·11																
4971	1927	1792	11A	·8577	18·6227	14·384	**1870**	7	7	Ap	30	·48	2	My	30	·01	3	Je	28○	·54	5	Jl	28	·07	6	Au	26	·60
4972	1928	1793	12A	·1165	7·7310	10·541	**1871**	1	4	Ap	19	·85	6	My	19	·38	7	Je	17●○	·91	2	Jl	17	·44	3	Au	15	·97
																									5	S	14	.50
4973	1929	1794	11A	·3752	26·3698	8·674	**1872**	2	3	My	7○	·74	5	Je	6●	·28	6	Jl	5	·81	1	Au	4	·34	2	S	2	.87
4974	1930	1795	11A	·6340	15·4781	4·831	**1873**	4	1	Ap	27○	·11	2	My	26	·64	4	Je	25	·17	5	Jl	24	·70	7	Au	23	·23
4975	1931	1796	11A	·8927	4·5864	0·989	**1874**	5	5	Ap	16○	·48	7	My	16	·01	1	Je	14	·54	4	Au	12	·60	6	S	11	·13
																	3	Jl	14	·07								
4976	1932	1797	12A	·1515	23·2254	26·676	**1875**	6	4	My	5	·38	5	Je	3	·91	7	Jl	3	·44	1	Au	1	·97	3	Au	31	·50
4977	1933	1798	11A	·4103	12·3336	22·834	**1876**	7	1	Ap	23	·74	3	My	23	·27	4	Je	21	·80	6	Jl	21	·34	7	Au	19○	·87
4978	1934	1799	11A	·6690	1·4419	18·991	**1877**	2	6	Ap	13	·11	7	My	12	·64	3	Jl	10	·70	5	Au	9○	·23	6	S	7	·76
													2	Je	11	·17												
4979	1935	1800	11A	·9278	20·0808	17·124	**1878**	3	5	My	2	·01	6	My	31	·54	1	Je	30	·07	2	Jl	29○	·60	4	Au	28	·13
4980	1936	1801	12A	·1865	9·1891	13·281	**1879**	4	2	Ap	21	·38	3	My	20	·91	5	Je	19	·44	6	Jl	18●	·97	1	Au	17	·50
4981	1937	1802	11A	·4453	27·8280	11·415	**1880**	5	1	My	9	·27	2	Je	7○	·80	4	Jl	7	·33	5	Au	5	·86	7	S	4	·40
4982	1938	1803	11A	·7040	16·9363	7·572	**1881**	7	5	Ap	28	·64	7	My	28●○	·17	1	Je	26	·70	3	Jl	26	·23	4	Au	24	·76
4983	1939	1804	11A	·9628	6·0446	3·729	**1882**	1	3	Ap	18	·01	4	My	17●	·54	6	Je	16	·07	7	Jl	15	·60	3	S	12	·66
																					2	Au	14	·13				
4984	1940	1805	12A	·2216	24·6835	1·862	**1883**	2	1	My	6	·90	3	Je	5	·44	4	Jl	4	·97	6	Au	3	·50	1	S	2	·03
4985	1941	1806	11A	·4803	13·7918	25·574	**1884**	3	6	Ap	25	·27	7	My	24	·80	2	Je	23	·33	3	Jl	22	·86	5	Au	21	·39
4986	1942	1807	11A	·7391	2·9008	21·732	**1885**	5	3	Ap	14	·64	5	My	14	·17	1	Jl	12	·23	2	Au	10	·76	4	S	9○	·29
													6	Je	12	·70												
4987	1943	1808	11A	·9978	21·5390	19·865	**1886**	6	2	My	3	·54	4	Je	2	·07	5	Jl	1	·60	7	Jl	31	·13	1	Au	29	·66
4988	1944	1809	12A	·2566	10·6473	16·022	**1887**	7	6	Ap	22	·90	1	My	22	·43	2	Je	20	·96	4	Jl	20○	·50	6	Au	19●	·03
4989	1945	1810	11A	·5153	29·2862	14·155	**1888**	1	5	My	10	·80	7	Je	9	·33	1	Jl	8○	·86	3	Au	7	·39	4	S	5	·92
4990	1946	1811	11A	·7741	18·3945	10·313	**1889**	3	3	Ap	30	·17	4	My	29	·70	6	Je	28●○	·23	7	Jl	27	·76	2	Au	26	·29
4991	1947	1812	12A	·0328	7·5028	6·470	**1890**	4	7	Ap	19	·54	2	My	19○	·07	3	Je	17●	·60	5	Jl	17	·13	6	Au	15	·66
																									1	S	14	·19
4992	1948	1813	12A	·2916	26·1416	4·603	**1891**	5	6	My	8○	·43	7	Je	6	·96	2	Jl	6	·49	4	Au	5	·02	5	S	3	·55
4993	1949	1814	11A	·5504	15·2499	0·760	**1892**	6	3	Ap	26○	·80	5	My	26	·33	6	Je	24	·86	1	Jl	24	·39	2	Au	22	·92
4994	1950	1815	11A	·8091	4·3582	24·472	**1893**	1	1	Ap	16	·17	2	My	15	·70	4	Je	14	·23	7	Au	12	·29	1	S	10	·82
																	5	Jl	13	·76								
4995	1951	1816	12A	·0679	22·9971	22·605	**1894**	2	7	My	5	·06	1	Je	3	·59	3	Jl	3	·13	4	Au	1	·66	6	Au	31○	·19
4996	1952	1817	12A	·3266	12·1054	18·763	**1895**	3	4	Ap	24	·43	5	My	23	·96	7	Je	22	·49	2	Jl	22	·02	3	Au	20●○	·55
4997	1953	1818	11A	·5854	1·2137	14·920	**1896**	4	1	Ap	12	·80	3	My	12	·33	6	Jl	10	·39	7	Au	8●○	·92	2	S	7	·45
													4	Je	10	·86												
4998	1954	1819	11A	·8441	19·8526	13·053	**1897**	6	7	My	1	·70	2	My	31	·23	3	Je	29	·76	5	Jl	29	·29	6	Au	27	·82

Surya Siddhanta.

Asvina				Kartika				Margasira				A.D.	Pausha				A.D.	Magha				Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411					+ 236·24470					+ 265·77529				+ 295·30588				{ +324·83647 / +354·36705 }			
+ 9·880				+ 11·856				+ 13·832					+ 15·808					+ 17·784				+ 19·760				{ + 21·736 / + 23·712 }			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	S	26	·97	4	O	26	·50	6	N	25	·03		7	D	24	·56	**60**	2	Jr	23○	·10	3	F	21	·63	5	Mr	22	·16
{7	S	15	·34	3	N	13	·40	4	D	12	·93	**61**	6	Jr	11●	·46		7	F	9	·99	2	Mr	11	·52	4	Ap	10	·05
{1	O	14	·87																										
6	O	4	·24	7	N	2	·77	2	D	20○	·30		3	D	31	·83	**62**	5	Jr	30	·36	6	F	28	·89	1	Mr	30	·42
3	S	23	·60	5	O	23	·14	6	N	21○	·67		1	D	21●	·20	**63**	2	Jr	19	·73	4	F	18	·26	5	Mr	19	79
2	O	12	·50	4	N	11○	·03	5	D	10	·56	**64**	7	Jr	9	·09		1	F	7	·62	3	Mr	8	·16	4	Ap	6	·69
6	S	30	·87	1	O	30	·40	2	N	28	·93		4	D	28	·46	**65**	5	Jr	26	·99	7	F	25	·52	2	Mr	27○	·05
4	S	20○	·24	5	O	19	·77	7	N	18	·30		1	D	17	·83	**66**	3	Jr	16	·36	4	F	14	·89	6	Mr	16○	·42
3	O	9	·13	4	N	7	·66	6	D	7	·20	**67**	7	Jr	5	·73		2	F	4	·26	3	Mr	5●○	·79	5	Ap	4	·32
7	S	28	·50	2	O	28	·03	3	N	26	·56		5	D	26	·09	**68**	6	Jr	24	·62	1	F	23	·15	2	Mr	23	·69
4	S	16	·87	6	O	16	·40	7	N	14	·93		2	D	14	·46	**69**	3	Jr	12○	·99	5	F	11	·52	7	Mr	13	·05
3	O	5	·77	5	N	4	·30	6	D	3	·83	**70**	1	Jr	2○	·36		2	Jr	31	·89	4	Mr	2	·42	5	Mr	31	·95
1	S	25	·13	2	O	24	·66	4	N	23	·19		5	D	22○	·72	**71**	7	Jr	21	·26	1	F	19	·79	3	Mr	21	·32
7	O	14	·03	1	N	12	·56	3	D	12●	·09	**72**	4	Jr	10	·62		6	F	9	·15	7	Mr	9	·68	2	Ap	8	·21
4	O	2	·40	5	O	31○	·93	7	N	30	·46		1	D	29	·99	**73**	3	Jr	28	·52	5	F	27	·05	6	Mr	28	·58
1	S	21	·76	3	O	21○	·30	4	N	19	·83		6	D	19	·36	**74**	7	Jr	17	·89	2	F	16	·42	3	Mr	17	·95
7	O	10●○	·66	2	N	9	·19	3	D	8	·72	**75**	5	Jr	7	·25		6	F	5	·78	1	Mr	7	·31	2	Ap	5●	·85
5	S	30●	·03	6	O	29	·56	1	N	28	·09		2	D	27	·62	**76**	4	Jr	26	·15	5	F	24○	·68	7	Mr	25	·21
2	S	18	·40	3	O	17	·93	5	N	16	·46		6	D	15	·99	**77**	1	Jr	14	·52	3	F	13○	·05	4	Mr	14●	·58
1	O	7	·29	2	N	5	·82	4	D	5	·36	**78**	5	Jr	3	·89		7	F	2○	·42	1	Mr	3	·95	3	Ap	3	·48
5	S	26	·66	7	O	26	·19	1	N	24	·72		3	D	24	·25	**79**	4	Jr	22●	·78	6	F	21	·31	7	Mr	22	·84
{3	S	16	·03	6	N	14	·09	7	D	13○	·62	**80**	2	Jr	12	·15		3	F	10	·68	5	Mr	11	·21	6	Ap	9	·74
{4	O	15	·56																										
1	O	3	·93	3	N	2	·46	4	D	1○	·99		6	D	31	·52	**81**	1	Jr	30	·05	2	F	28	·58	4	Mr	30	·11
6	S	23	·29	7	O	22	·82	2	N	21○	·35		3	D	20	·88	**82**	5	Jr	19	·42	6	F	17	·95	1	Mr	19	·48
5	O	12	·19	6	N	10	·72	1	D	10	·25	**83**	2	Jr	8	·78		4	F	7	·31	5	Mr	8	·84	7	Ap	7○	·37
2	O	1○	·56	4	O	31	·09	5	N	29	·62		7	D	29	·15	**84**	1	Jr	27	·68	3	F	26	·21	4	Mr	26○	·74
6	S	19○	·92	1	O	19	·46	2	N	17	·99		4	D	17	·52	**85**	6	Jr	16	·05	7	F	14	·58	2	Mr	16○	·11
5	O	8	·82	7	N	7	·35	1	D	6	·88	**86**	3	Jr	5	·41		4	F	3	·94	6	Mr	5	·48	1	Ap	4	·01
3	S	28	·19	4	O	27	·72	6	N	26	·25		7	D	25	·78	**87**	2	Jr	24○	·31	3	F	22	·84	5	Mr	24	·37
7	S	17	·56	2	O	17	·09	3	N	15	·62		5	D	15	·15	**88**	6	Jr	13○	·68	1	F	12	·21	{2	Mr	12	·74
																										{4	Ap	11	·27
6	O	5	·45	7	N	3	·98	2	D	3	·52	**89**	4	Jr	2○	·05		5	Jr	31	·58	7	Mr	2	·11	1	Mr	31	·64
3	S	24	·82	5	O	24	·35	6	N	22	·88		1	D	22	·41	**90**	2	Jr	20	·94	4	F	19	·47	6	Mr	21	·00
2	O	13	·72	4	N	12○	·25	5	D	11●	·78	**91**	7	Jr	10	·31		1	F	8	·84	3	Mr	10	·37	4	Ap	8	·90
7	O	3	·09	1	N	1○	·62	3	D	1	·15		4	D	30	·68	**92**	6	Jr	29	·21	7	F	27	·74	2	Mr	28	·27
4	S	21	·45	5	O	20○	·98	7	N	19	·51		2	D	19	·04	**93**	3	Jr	17	·57	5	F	16	·11	6	Mr	17	·64
3	O	10	·35	4	N	8	·88	6	D	8	·41	**94**	7	Jr	6	·94		2	F	5	·47	4	Mr	7○	·00	5	Ap	5●	·53
7	S	29●	·72	2	O	29	·25	3	N	27	·78		5	D	27	·31	**95**	6	Jr	25	·84	1	F	24○	·37	2	Mr	25	·90
5	S	19	·08	6	O	18	·61	1	N	17	·15		2	D	16	·68	**96**	4	Jr	15	·21	5	F	13○	·74	7	Mr	14	·27
3	O	6	·98	5	N	5	·51	7	D	5	·04	**97**	1	Jr	3	·57		3	F	2	·10	4	Mr	3	·63	6	Ap	2	·17
1	S	26	·35	2	O	25	·88	4	N	24	·41		5	D	23○	·94	**98**	7	Jr	22●	·47	2	F	21	·00	3	Mr	22	·53

TABLE X—

☉'s Anom col. 6: + 29·53059 (Jyeshta), + 59·06117 (Ashada), + 88·59176 (Sravana), + 118·12235 (Bhadrapada)

☾'s Anom col. 7: + 1·976 (Jyeshta), + 3·952 (Ashada), + 5·928 (Sravana), + 7·904 (Bhadrapada)

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month	Ashada Day	Ashada Fraction	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
4999	1955	1820	12A	·1029	8·9609	9·210	**1898**	7	5	Ap	21	·06	6	My	20	·59	1	Je	19○	·12	2	Jl	18	·65	4	Au	17	·19
5000	1956	1821	12A	·3617	27·5998	7·344	**1899**	1	3	My	9	·96	5	Je	8○	·49	7	Jl	8	·02	1	Au	6	·55	3	S	5	·08
5001	1957	1822	12A	·6204	16·7081	3·504	**1900**	2	1	Ap	29	·33	2	My	28●○	·86	4	Je	27	·39	5	Jl	26	·92	7	Au	25	·45
5002	1958	1823	12A	·8792	5·8164	27·215	**1901**	3	5	Ap	18	·69	7	My	18●	·23	1	Je	16	·76	3	Jl	16	·29	6	S	13	·35
																					4	Au	14	82				
5003	1959	1824	13A	·1379	24·4553	25·349	**1902**	4	4	My	7	·59	6	Je	6	·12	7	Jl	5	·65	2	Au	4	·18	3	S	2	·71
5004	1960	1825	13A	·3967	13·5636	21·506	**1903**	5	1	Ap	26	·96	3	My	26	·49	5	Je	25	·02	6	Jl	24	·55	1	Au	23	·08
5005	1961	1826	12A	·6554	2·6719	17·663	**1904**	6	6	Ap	15	·33	7	My	14	·86	3	Jl	12	·92	5	Au	11	·45	6	S	9	·98
													2	Je	13	·39												
5006	1962	1827	12A	·9142	21·3107	15·796	**1905**	1	5	My	4	·22	6	Je	2	·75	1	Jl	2	·29	2	Jl	31○	·82	4	Au	30●	·35
5007	1963	1828	13A	·1729	10·4190	11·954	**1906**	2	2	Ap	23	·59	4	My	23	·12	5	Je	21	·65	7	Jl	21○	·18	1	Au	19●	·71
5008	1964	1829	13A	·4317	29·0579	10·087	**1907**	3	1	My	12	·49	3	Je	11	·02	4	Jl	10○	·55	6	Au	9	·08	7	S	7	·61
5009	1965	1830	12A	·6905	18·1662	6·244	**1908**	4	5	Ap	30	·86	7	My	30	·39	1	Je	28●	·92	3	Jl	28	·45	4	Au	26	·98
5010	1966	1831	12A	·9492	7·2745	2·401	**1909**	6	3	Ap	20	·22	4	My	19○	·75	6	Je	18●	·28	7	Jl	17	·81	3	S	14	·88
																					2	Au	16	·35				
5011	1967	1832	13A	·2080	25·9134	0·535	**1910**	7	2	My	9○	·12	3	Je	7	·65	5	Jl	7	·18	6	Au	5	·71	1	S	4	·24
5012	1968	1833	13A	·4667	15·0217	24·246	**1911**	1	6	Ap	28	·49	1	My	28	·02	2	Je	26	·55	4	Jl	26	·08	5	Au	24	·61
5013	1969	1834	12A	·7255	4·1300	20·404	**1912**	2	3	Ap	16●	·85	5	My	16	·39	6	Je	14	·92	2	Au	12	·98	4	S	11○	·51
																	1	Jl	14	·45								
5014	1970	1835	12A	·9842	22·7689	18·537	**1913**	4	2	My	5	·75	4	Je	4	·28	5	Jl	3	·81	7	Au	2	·34	1	Au	31○	·87
5015	1971	1836	13A	·2430	11·8772	14·694	**1914**	5	7	Ap	25	·12	1	My	24	·65	3	Je	23	·18	4	Jl	22	·71	6	Au	21●○	·24
5016	1972	1837	13A	·5018	0·9855	10·851	**1915**	6	4	Ap	14	·49	7	Je	12	·55	2	Jl	12	·08	3	Au	10●	·61	5	S	9	·14
									6	My	14	·02																
5017	1973	1838	12A	·7605	19·6244	8·985	**1916**	7	3	My	2	·38	4	My	31	·91	6	Je	30○	·45	7	Jl	29	·98	2	Au	28	·51
5018	1974	1839	13A	·0193	8·7327	5·142	**1917**	2	7	Ap	21	·75	2	My	21	·28	3	Je	19●○	·81	5	Jl	19	·34	6	Au	17	·87
																									1	S	16	·40
5019	1975	1840	13A	·2780	27·3715	3·275	**1918**	3	6	My	10	·65	1	Je	9●○	·18	2	Jl	8	·71	4	Au	7	·24	5	S	5	·77
5020	1976	1841	13A	·5368	16·4798	26·987	**1919**	4	4	Ap	30	·02	5	My	29●	·55	7	Je	28	·08	1	Jl	27	·61	3	Au	26	·14
5021	1977	1842	12A	·7955	5·5881	23·144	**1920**	5	1	Ap	18○	·38	2	My	17	·91	4	Je	16	·44	5	Jl	15	·97	2	S	13	·04
																					7	Au	14	·51				
5022	1978	1843	13A	·0543	24·2270	21·278	**1921**	7	7	My	7	·28	1	Je	5	·81	3	Jl	5	·34	4	Au	3	·87	6	S	2	·40
5023	1979	1844	13A	·3130	13·3353	17·435	**1922**	1	4	Ap	26	·65	6	My	26	·18	7	Je	24	·71	2	Jl	24	·24	3	Au	22	·77
5024	1980	1845	13A	·5718	2·4436	13·592	**1923**	2	2	Ap	16	·01	3	My	15	·55	6	Jl	13	·61	1	Au	12○	·14	2	S	10●	·67
													5	Je	14	·08												
5025	1981	1846	12A	·8306	21·0825	11·725	**1924**	3	7	My	3	·91	2	Je	2	·44	3	Jl	1	·97	5	Jl	31○	·50	7	Au	30●	·03
5026	1982	1847	13A	·0893	10·1908	7·883	**1925**	5	5	Ap	23	·28	6	My	22	·81	1	Je	21	·34	2	Jl	20○	·87	4	Au	19	·40
5027	1983	1848	13A	·3481	28·8297	6·016	**1926**	6	4	My	12	·18	5	Je	10	·71	7	Jl	10●	·24	1	Au	8	·77	3	S	7	·30
5028	1984	1849	13A	·6068	17·9380	2·173	**1927**	7	1	My	1	·54	3	My	31○	·07	4	Je	29●	·61	6	Jl	29	·14	7	Au	27	·67
5029	1985	1850	12A	·8656	7·0463	25·885	**1928**	1	5	Ap	19	·91	7	My	19●○	·44	1	Je	17	·97	3	Jl	17	·50	6	S	14	·56
																					5	Au	16	·03				
5030	1986	1851	13A	·1243	25·9852	24·018	**1929**	3	4	My	8●○	·81	6	Je	7	·34	7	Jl	6	·87	2	Au	5	·40	3	S	3	·93
5031	1987	1852	13A	·3831	14·7935	20·175	**1930**	4	2	Ap	28	·18	3	My	27	·71	5	Je	26	·24	6	Jl	25	·77	1	Au	24	·30
5032	1988	1853	13A	·6419	3·9018	16·333	**1931**	5	6	Ap	17●	·54	1	My	17	·07	2	Je	15	·60	5	Au	13	·67	7	S	12○	·20
																	4	Jl	15	·13								
5033	1989	1854	12A	·9006	22·5406	14·467	**1932**	6	5	My	5	·44	6	Je	3	·97	1	Jl	3	·50	3	Au	2	·03	4	Au	31○	·56
5034	1990	1855	13A	·1594	11·6489	10·623	**1933**	1	2	Ap	24	·81	4	My	24	·34	5	Je	22	·87	7	Jl	22	·40	1	Au	20●	·93
5035	1991	1856	13A	·4181	0·7572	6·780	**1934**	2	7	Ap	14	·17	3	Je	12	·24	4	Jl	11○	·77	6	Au	10●	·30	7	S	8	·83
									1	My	13	·71																
5036	1992	1857	13A	·6769	19·3962	4·914	**1935**	3	6	My	3	·07	7	Je	1	·60	2	Jl	1○	·13	3	Jl	30	·66	5	Au	29	·19
5037	1993	1858	12A	·9356	8·5044	1·071	**1936**	4	3	Ap	21	·44	4	My	20	·97	6	Je	19●○	·50	1	Jl	19	·03	2	Au	17	·56
																									4	S	16	·09

Surya Siddhanta.

Asvina Week-day	Month	Day	Fraction	Kartika Week-day	Month	Day	Fraction	Margasira Week-day	Month	Day	Fraction	A.D.	Pausha Week-day	Month	Day	Fraction	A.D.	Magha Week-day	Month	Day	Fraction	Phalguna Week-day	Month	Day	Fraction	Chaitra Week-day	Month	Day	Fraction
+ 147·65293				+ 177·18353				+ 206·71411					+ 236·24470					+ 265·77529				+ 295·30588				{ +324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832					+ 15·808					+ 17·784				+ 19·760				{ + 21·736 + 23·712			
{5	S	15	·72	1	N	13	·78	3	D	13○	·31	99	4	Jr	11	·84		6	F	10	·37	7	Mr	11	·90	2	Ap	10	·43
{7	O	15	·25																										
4	O	4	·61	6	N	3	·14	7	D	2○	·67	19	2	Jr	1	·21	00	3	Jr	30	·74	5	Mr	1	·27	6	Mr	30	·80
1	S	23	·98	3	O	23	·51	5	N	22●	·04		6	D	21	·57	01	1	Jr	20	·10	2	F	18	·63	4	Mr	20	·16
7	O	12○	·88	2	N	11●	·41	3	D	10	·94	02	5	Jr	9	·47		7	F	8	·00	1	Mr	9	·53	3	Ap	8○	·06
5	O	2○	·25	6	O	31●	·78	1	N	30	·31		2	D	29	·84	03	4	Jr	28	·37	5	F	26	·90	7	Mr	28●○	·43
2	S	21●○	·61	4	O	21	·14	5	N	19	·67		7	D	19	·20	04	1	Jr	17	·73	3	F	16	·27	4	Mr	16●	·80
1	O	9	·51	3	N	8	·04	4	D	7	·57	05	6	Jr	6	·10		7	F	4○	·63	2	Mr	6	·16	3	Ap	4	·69
5	S	28	·88	7	O	28	·41	1	N	26	·94		3	D	26	·47	06	5	Jr	25○	·00	6	F	23	·53	1	Mr	25	·06
3	S	18	·24	4	O	17	·77	6	N	16	·31		7	D	15	·84	07	2	Jr	14●○	·37	3	F	12	·90	{5	Mr	14	·43
																										{6	Ap	12	·96
2	O	7	·14	3	N	5	·67	5	D	5	·20	08	6	Jr	3	·73		1	F	2	·26	2	Mr	2	·79	4	Ap	1	·33
6	S	25	·51	1	O	25	·04	2	N	23	·57		4	D	23●	·10	09	5	Jr	21	·63	7	F	20	·16	1	Mr	21	·69
5	O	14	·41	6	N	12○	·94	1	D	12	·47	10	3	Jr	11	·00		4	F	9	·53	6	Mr	11	·06	7	Ap	9	·59
2	O	3	·77	4	N	2●○	·30	5	D	1	·83		7	D	31	·37	11	1	Jr	29	·90	3	F	28	·43	4	Mr	29	·96
7	S	23	·14	1	O	22●	·67	3	N	21	·20		4	D	20	·73	12	6	Jr	19	·26	7	F	17	·79	2	Mr	18○	·32
6	O	11●	·04	7	N	9	·57	2	D	9	·10	13	3	Jr	7	·63		5	F	6	·16	6	Mr	7○	·69	1	Ap	6	·22
3	S	30	·41	4	O	29	·94	6	N	28	·47		1	D	28	·00	14	2	Jr	26	·53	4	F	25○	·06	5	Mr	26	·59
7	S	19	·77	2	O	19	·30	3	N	17	·83		5	D	17	·36	15	6	Jr	15	·89	1	F	14●	·43	2	Mr	15	·96
6	O	8	·67	1	N	7	·20	2	D	6	·73	16	4	Jr	5○	·26		5	F	3●	·79	7	Mr	4	·32	1	Ap	2	·85
4	S	27	·04	5	O	26	·57	7	N	25	·10		1	D	24○	·63	17	3	Jr	23●	·16	4	F	21	·69	6	Mr	23	·22
2	O	15	·93	4	N	14	·47	6	D	14○	·00	18	7	Jr	12	·53		2	F	11	·06	3	Mr	12	·59	5	Ap	11	·12
7	O	5	·30	1	N	3	·83	3	D	3●	·36	19	4	Jr	1	·89		6	Jr	31	·42	7	Mr	1	·95	2	Mr	31	·49
4	S	24	·67	6	O	24○	·20	7	N	22●	·73		2	D	22	·26	20	3	Jr	20	·79	5	F	19	·32	6	Mr	19	·85
3	O	12○	·57	5	N	11●	·10	6	D	10	·63	21	1	Jr	9	·16		2	F	7	·69	4	Mr	9	·22	5	Ap	7●○	·75
7	O	1●○	·93	2	O	31	·46	3	N	29	·99		5	D	29	·53	22	7	Jr	28	·06	1	F	26	·59	3	Mr	28●	·12
5	S	21	·30	6	O	20	·83	1	N	19	·36		2	D	18	·89	23	4	Jr	17	·42	5	F	15○	·95	7	Mr	17●	·48
4	O	10	·20	5	N	8	·73	7	D	8	·26	24	1	Jr	6	·79		3	F	5○	·32	4	Mr	5	·85	6	Ap	4	·38
1	S	28	·57	3	O	28	·10	4	N	26	·63		6	D	26	·16	25	7	Jr	24●○	·69	2	F	23	·22	3	Mr	24	·75
5	S	17	·93	7	O	17	·46	1	N	15	·99		3	D	15	·52	26	5	Jr	14●	·05	6	F	12	·59	{1	Mr	14	·12
																										{2	Ap	12	·65
4	O	6	·83	6	N	5	·36	7	D	4○	·89	27	2	Jr	3	·42		3	F	1	·95	5	Mr	3	·48	7	Ap	2	·01
2	S	26	·20	3	O	25	·73	5	N	24○	·26		6	D	23	·79	28	1	Jr	22	·32	2	F	20	·85	4	Mr	21	·38
1	O	14	·09	2	N	12●○	·63	4	D	12	·16	29	5	Jr	10	·69		7	F	9	·22	1	Mr	10	·75	3	Ap	9	·28
5	O	3	·46	6	N	1●	·99	1	D	1	·52		3	D	31	·05	30	4	Jr	29	·58	6	F	28	·11	7	Mr	29○	·65
2	S	22○	·83	4	O	22	·36	5	N	20	·89		7	D	20	·42	31	1	Jr	18	·95	3	F	17	·48	5	Mr	19○	·01
1	O	11	·73	3	N	10	·26	4	D	9	·79	32	6	Jr	8	·32		7	F	6	·85	2	Mr	7○	·38	3	Ap	5	·91
6	S	30	·09	7	O	29	·62	2	N	28	·15		3	D	27	·69	33	5	Jr	26	·22	6	F	24●	·75	1	Mr	26	·28
3	S	19	·46	4	O	18	·99	6	N	17	·52		1	D	17	·05	34	2	Jr	15○	·58	4	F	14●	·11	5	Mr	15	·64
2	O	8	·36	3	N	6	·89	5	D	6	·42	35	6	Jr	4○	·95		1	F	3	·48	3	Mr	5	·01	4	Ap	3	·54
6	S	27	·73	1	O	27	·26	2	N	25	·79		4	D	25○	·32	36	5	Jr	23	·85	7	F	22	·38	1	Mr	22	·91
5	O	15	·62	7	N	14	·15	1	D	13	·68	37	3	[illegible]	12	·21		4	F	10	·75	6	Mr	12	·28	7	Ap	10	·81

NOTE.—From **1900 A.D.** to **1999 A.D.** all eclipses of the Sun, visible anywhere in the world, are shown. From **1 B.C.** to **300 A.D.** the same observation applies. Between **300 A.D.** and **1900 A.D.** only those eclipses of the Sun which are visible in India are entered in this table.

TABLE X—

☉'s Anom col. 6 + 29·53059 + 59·06117 + 88·59176 + 118·12235

☾'s Anom col. 7 + 1·976 + 3·952 + 5·928 + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha				Jyeshta				Ashada				Sravana				Bhadrapada			
									Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
5038	1994	1859	13A	·1944	27·1433	26·759	**1937**	6	2	My	10	·34	3	Je	8	·87	5	Jl	8	·40	6	Au	6	·93	1	S	5	·46
5039	1995	1860	13A	·4531	16·2516	22·916	**1938**	7	6	Ap	29○	·70	1	My	29	·23	2	Je	27	·77	4	Jl	27	·30	5	Au	25	·83
5040	1996	1861	13A	·7119	5·3599	19·073	**1939**	1	4	Ap	19●○	·07	5	My	18	·60	7	Je	17	·13	{ 1	Jl	16	·66	4	S	13	·72
																					{ 3	Au	15	·19				
5041	1997	1862	12A	·9707	23·9988	17·207	**1940**	2	2	My	6	·97	4	Je	5	·50	6	Jl	5	·03	7	Au	3	·56	2	S	2	·09
5042	1998	1863	13A	·2294	13·1071	13·364	**1941**	4	7	Ap	26	·34	1	My	25	·87	3	Je	24	·40	4	Jl	23	·93	6	Au	22○	·46
5043	1999	1864	13A	·4882	2·2154	9·521	**1942**	5	4	Ap	15	·70	{ 6	My	15	·23	2	Jl	13	·29	3	Au	11○	·83	5	S	10●	·36
													{ 7	Je	13	·76												
5044	2000	1865	13A	·7469	20·8543	7·654	**1943**	6	3	My	4	·60	5	Je	3	·13	6	Jl	2	·66	1	Au	1○	·19	2	Au	30	·72
5045	2001	1866	13A	·0057	9·9626	3·812	**1944**	7	7	Ap	22	·97	2	My	22	·50	4	Je	21	·03	5	Jl	20●	·56	7	Au	19	·09
5046	2002	1867	13A	·2644	28·6614	1·845	**1945**	2	6	My	11	·86	1	Je	10○	·39	2	Jl	9●	·93	4	Au	8	·46	5	S	6	·99
5047	2003	1868	13A	·5232	17·7097	25·657	**1946**	3	4	My	1	·23	5	My	30○	·76	7	Je	29●	·29	1	Jl	28	·82	3	Au	27	·35
5048	2004	1869	13A	·7820	6·8180	21·814	**1947**	4	1	Ap	20	·60	3	My	20●○	·13	4	Je	18	·66	{ 6	Jl	18	·19	2	S	15	·25
																					{ 7	Au	16	·72				
5049	2005	1870	13A	·0407	25·4569	19·947	**1948**	5	7	My	8●	·50	2	Je	7	·03	3	Jl	6	·56	5	Au	5	·09	6	S	3	·62
5050	2006	1871	13A	·2995	14·5652	16·104	**1949**	7	4	Ap	27●	·86	6	My	27	·39	7	Je	25	·92	2	Jl	25	·45	3	Au	23	·99
5051	2007	1872	13A	·5582	3·6735	12·262	**1950**	1	2	Ap	17	·23	3	My	16	·76	{ 5	Je	15	·29	1	Au	13	·35	2	S	11●○	·88
																	{ 6	Jl	14	·82								
5052	2008	1873	13A	·8170	22·3124	10·395	**1951**	2	1	My	6	·13	2	Je	4	·66	4	Jl	4	·19	5	Au	2	·72	7	S	1●	·25
5053	2009	1874	13A	·0757	11·4207	6·552	**1952**	3	5	Ap	24	·49	7	My	24	·03	1	Je	22	·56	3	Jl	22○	·09	4	Au	20●	·62
5054	2010	1875	13A	·3345	0·5290	2·709	**1953**	5	{ 2	Ap	13	·86	5	Je	11	·92	7	Jl	11●○	·45	1	Au	9	·98	3	S	8	·51
									{ 4	My	13	·39																
5055	2011	1876	13A	·5933	19·1679	0·843	**1954**	6	1	My	2	·76	3	Je	1	·29	4	Je	30●○	·82	6	Jl	30	·35	7	Au	28	·88
5056	2012	1877	13A	·8520	8·2762	24·554	**1955**	7	6	Ap	22	·13	7	My	21	·66	2	Je	20●	·19	3	Jl	19	·72	{ 5	Au	18	·25
																									{ 6	S	16	·78
5057	2013	1878	13A	·1108	26·9151	22·688	**1956**	1	5	My	10○	·02	6	Je	8	·55	1	Jl	8	·09	2	Au	6	·62	4	S	5	·15
5058	2014	1879	13A	·3695	16·0234	18·845	**1957**	3	2	Ap	29○	·39	3	My	28	·92	5	Je	27	·45	6	Jl	26	·98	1	Au	25	·51
5059	2015	1880	13A	·6283	5·1317	15·002	**1958**	4	6	Ap	18●○	·76	1	My	18	·29	2	Je	16	·82	{ 4	Jl	16	·35	7	S	13	·41
																					{ 5	Au	14	·88				
5060	2016	1881	13A	·8870	23·7705	13·135	**1959**	5	5	My	7	·66	7	Je	6	·19	1	Jl	5	·72	3	Au	4	·25	4	S	2○	·78
5061	2017	1882	13A	·1458	12·8788	9·293	**1960**	6	3	Ap	26	·02	4	My	25	·55	6	Je	24	·08	7	Jl	23	·61	2	Au	22○	·15
5062	2018	1883	13A	·4045	1·9871	5·450	**1961**	1	7	Ap	15	·39	{ 1	My	14	·92	4	Jl	12	·98	6	Au	11●○	·51	1	S	10	·04
													{ 3	Je	13	·45												
5063	2019	1884	13A	·6633	20·6260	3·583	**1962**	2	6	My	4	·29	7	Je	2	·82	2	Jl	2	·35	3	Jl	31●	·88	5	Au	30	·41
5064	2020	1885	13A	·9221	9·7343	27·295	**1963**	3	3	Ap	23	·65	5	My	23	·19	6	Je	21○	·72	1	Jl	21	·25	2	Au	19	·78
5065	2021	1886	13A	·1808	28·3732	25·429	**1964**	4	2	My	11	·55	4	Je	10○	·08	5	Jl	9●	·61	7	Au	8	·14	1	S	6	·67
5066	2022	1887	13A	·4396	17·4815	21·586	**1965**	6	6	Ap	30	·92	1	My	30○	·45	2	Je	28	·98	4	Jl	28	·51	6	Au	27	·04
5067	2023	1888	13A	·6983	6·5898	17·743	**1966**	7	4	Ap	20○	·29	5	My	19●	·82	7	Je	18	·35	{ 1	Jl	17	·88	4	S	14	·94
																					{ 3	Au	16	·41				
5068	2024	1889	13A	·9571	25·2287	15·876	**1967**	1	3	My	9●	·18	4	Je	7	·71	6	Jl	7	·25	7	Au	5	·78	2	S	4	·31
5069	2025	1890	13A	·2158	14·3370	12·031	**1968**	2	7	Ap	27	·55	2	My	27	·08	3	Je	25	·61	5	Jl	25	·14	6	Au	23	·67
5070	2026	1891	13A	·4746	3·4453	8·191	**1969**	4	4	Ap	16	·92	6	My	16	·45	{ 7	Je	14	·98	4	Au	13	·04	5	S	11	·57
																	{ 2	Jl	14	·51								
5071	2027	1892	13A	·7334	22·0842	6·324	**1970**	5	3	My	5	·82	5	Je	4	·35	6	Jl	3	·88	1	Au	2○	·41	2	Au	31	·94
5072	2028	1893	13A	·9921	11·1925	2·481	**1971**	6	1	Ap	25	·18	2	My	24	·71	4	Je	23	·24	5	Jl	22●○	·77	7	Au	21	·31
5073	2029	1894	13A	·2509	0·3008	26·193	**1972**	7	{ 5	Ap	13	·55	1	Je	11	·61	3	Jl	11○	·14	4	Au	9	·67	6	S	8	·20
									{ 7	My	13	·08																
5074	2030	1895	13A	·5096	18·9396	24·326	**1973**	2	4	My	2	·45	5	My	31	·98	7	Je	30●	·51	2	Jl	30	·04	3	Au	28	·57
5075	2031	1896	13A	·7684	8·0479	20·483	**1974**	3	1	Ap	21	·81	3	My	21○	·35	4	Je	19	·88	6	Jl	19	·41	{ 7	Au	17	·94
																									{ 2	S	16	·47

Surya Siddhanta.

Asvina				Kartika				Margasira				A.D.	Pausha				A.D.	Magha				Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411					+ 236·24470					+ 265·77529				+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832					+ 15·808					+ 17·784				+ 19·760				+21·736 +23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
2	O	4	·99	4	N	3○	·52	6	D	3●	·05	38	7	Jr	1	·58		2	Jr	31	·11	3	Mr	1	·64	5	Mr	31	·17
7	S	24	·36	1	O	23○	·89	3	N	22●	·42		4	D	21	·95	39	6	Jr	20	·48	1	F	19	·01	2	Mr	20	·54
6	O	13○	·25	7	N	11	·79	2	D	11	·32	40	3	Jr	9	·85		5	F	8	·38	6	Mr	8	·91	1	Ap	7○	·44
3	O	1●	·62	5	O	31	·15	6	N	29	·68		1	D	29	·21	41	2	Jr	27	·74	4	F	26○	·27	5	Mr	27	·81
7	S	20●	·99	2	O	20	·52	4	N	19	·05		5	D	18	·58	42	7	Jr	17	·11	1	F	15○	·64	3	Mr	17	·17
6	O	9	·89	1	N	8	·42	2	D	7	·95	43	4	Jr	6	·48		6	F	5●○	·01	7	Mr	6	·54	2	Ap	5	·07
4	S	29	·25	5	O	28	·78	7	N	27	·31		1	D	26	·85	44	3	Jr	25●	·38	4	F	23	·91	6	Mr	24	·44
1	S	17	·62	3	O	17	·15	4	N	15	·68		6	D	15○	·21	45	7	Jr	13●	·74	2	F	12	·27	{3	Mr	13	·80
																										{5	Ap	12	·33
7	O	6	·52	2	N	5	·05	3	D	4○	·58	46	5	Jr	3	·11		6	F	1	·64	1	Mr	3	·17	2	Ap	1	·70
4	S	25	·88	6	O	25	·41	7	N	23○	·95		2	D	23	·48	47	4	Jr	22	·01	5	F	20	·54	7	Mr	22	·07
3	O	14	·78	5	N	13	·31	6	D	12	·84	48	1	Jr	11	·37		2	F	9	·90	4	Mr	10	·43	5	Ap	8○	·97
1	O	3○	·15	2	N	1●	·68	4	D	1	·21		5	D	30	·74	49	7	Jr	29	·27	1	F	27	·80	3	Mr	29○	·33
5	S	22○	·52	7	O	22	·05	1	N	20	·58		3	D	20	·11	50	4	Jr	18	·64	6	F	17	·17	7	Mr	18○	·70
4	O	11	·41	5	N	9	·94	7	D	9	·47	51	2	Jr	8	·01		3	F	6	·54	5	Mr	8	·07	6	Ap	6	·60
1	S	30	·78	3	O	30	·31	4	N	28	·84		6	D	28	·37	52	7	Jr	26○	·90	2	F	25●	·43	3	Mr	25	·96
6	S	19	·15	7	O	18	·68	2	N	17	·21		3	D	16	·74	53	5	Jr	15○	·27	6	F	13●	·80	1	Mr	15	·33
5	O	8	·05	6	N	6	·58	1	D	6	·11	54	2	Jr	4○	·64		4	F	3	·17	5	Mr	4	·70	7	Ap	3	·23
2	S	27	·41	3	O	26	·94	5	N	25	·47		7	D	25●	·00	55	1	Jr	23	·53	3	F	22	·07	4	Mr	23	·60
1	O	16	·31	2	N	14○	·84	4	D	14●	·37	56	5	Jr	12	·90		7	F	11	·43	1	Mr	11	·96	3	Ap	10	·49
5	O	4	·68	7	N	3○	·21	1	D	2●	·74	57	3	Jr	1	·27		4	Jr	30	·80	6	Mr	1	·33	7	Mr	30	·86
3	S	24	·04	4	O	23●○	·57	6	N	22	·10		7	D	21	·64	58	2	Jr	20	·17	3	F	18	·70	5	Mr	20	·23
1	O	12	·94	3	N	11	·47	5	D	11	·00	59	6	Jr	9	·53		1	F	8	·06	2	Mr	9○	·59	4	Ap	8	·12
6	O	2●	·31	7	O	31	·84	2	N	30	·37		3	D	29	·90	60	5	Jr	28	·43	6	F	26○	·96	1	Mr	27	·49
3	S	20●	·68	5	O	20	·21	6	N	18	·74		1	D	18	·27	61	2	Jr	16	·80	4	F	15○	33	5	Mr	16	·86
2	O	9	·57	4	N	8	·10	5	D	7	·63	62	7	Jr	6	·17		1	F	4●	·70	3	Mr	6	·23	4	Ap	4	·76
6	S	28	·94	1	O	28	·47	3	N	27	·00		4	D	26○	·53	63	6	Jr	25●	·06	7	F	23	·59	2	Mr	25	·12
{4	S	18	·31	7	N	16	·37	1	D	15○	·90		**Pausha Kshaya**				64	3	Jr	14	·43	4	F	12	·96	{6	Mr	13	·49
{5	O	17	·84																							{F	Ap	12	·02
3	O	6	·21	4	N	4	·74	6	D	4●○	·27	65	7	Jr	2	·80		2	F	1	·33	3	Mr	2	·86	5	Ap	1	·39
7	S	25	·57	2	O	25	·10	3	N	23●	·63		5	D	23	·16	66	6	Jr	21	·69	1	F	20	·23	2	Mr	21	·76
6	O	14○	·47	1	N	13●	·00	2	D	12	·53	67	4	Jr	11	·06		5	F	9	·59	7	Mr	11	·12	1	Ap	9○	·65
3	O	3○	·84	5	N	2	·37	6	D	1	·90		1	D	31	·43	68	2	Jr	29	·96	4	F	28	·49	6	Mr	29○	·02
1	S	22○	·20	2	O	21	·73	4	N	20	·27		5	D	19	·80	69	7	Jr	18	·33	1	F	16	·86	3	Mr	18●	·89
7	O	11	·10	1	N	9	·63	3	D	9	·16	70	4	Jr	7	·69		6	F	6○	·22	7	Mr	7●	·75	2	Ap	6	·29
4	S	30	·47	6	O	30	·00	7	N	28	·53		2	D	28	·06	71	3	Jr	26○	·59	5	F	25●	·12	6	Mr	26	·65
1	S	19	·84	3	O	19	·37	4	N	17	·90		6	D	17	·43	72	7	Jr	15○	·96	2	F	14	·49	4	Mr	15	·02
7	O	7	·73	2	N	6	·26	3	D	5	·79	73	5	Jr	4●	·33		6	F	2	·86	1	Mr	4	·39	2	Ap	2	·92
5	S	27	·10	6	O	26	·63	1	N	25○	·16		2	D	24●	·69	74	4	Jr	23	·23	5	F	21	·75	7	Mr	23	·28
4	O	16	·00	5	N	14○	·53	7	D	14●	·06	75	1	Jr	12	·59		3	F	11	·12	4	Mr	12	·65	6	Ap	11	·18

TABLE X—

⊙'s Anom col. 6 + 29·53059 + 59·06117 + 88·59176 + 118·12235

☾'s Anom col. 7 + 1·976 + 3·952 + 5·928 + 7·904

Kaliyuga.	Vikrama Era.	Saka Era.	Commencement of Solar Year. Month and day A.D.	Commencement of Solar Year. Fraction of day.	First New-Moon in Solar Year.	Anomaly of first New-Moon.	A.D.	Week-day of 1st January.	Vaisakha Week-day	Vaisakha Month	Vaisakha Day	Vaisakha Fraction	Jyeshta Week-day	Jyeshta Month	Jyeshta Day	Jyeshta Fraction	Ashada Week-day	Ashada Month	Ashada Day	Ashada Fraction	Sravana Week-day	Sravana Month	Sravana Day	Sravana Fraction	Bhadrapada Week-day	Bhadrapada Month	Bhadrapada Day	Bhadrapada Fraction
5076	2032	1897	14A	·0271	26·6868	18·617	**1975**	4	7	My	10●○	·71	2	Je	9	·24	3	Jl	8	·77	5	Au	7	·30	6	S	5	·83
5077	2033	1898	13A	·2859	15·7951	14·774	**1976**	5	5	Ap	29●○	·08	6	My	28	·61	1	Je	27	·14	2	Jl	26	·67	4	Au	25	·20
5078	2034	1899	13A	·5447	4·9034	10·931	**1977**	7	2	Ap	18●	·45	3	My	17	·98	5	Je	16	·51	1	Au	14	·57	3	S	13○	·10
																	7	Jl	16	·04								
5079	2035	1900	13A	·8034	23·5423	9·064	**1978**	1	1	My	7	·34	2	Je	5	·87	4	Jl	5	·41	5	Au	3	·94	7	S	2○	·47
5080	2036	1901	14A	·0622	12·6506	5·222	**1979**	2	5	Ap	26	·71	7	My	26	·24	1	Je	24	·77	3	Jl	24	·30	4	Au	22○	·83
5081	2037	1902	13A	·3209	1·7589	1·379	**1980**	3	3	Ap	15	·08	4	My	14	·61	7	Jl	12	·67	2	Au	11	·20	3	S	9	·73
													6	Je	13	·14												
5082	2038	1903	13A	·5797	20·3978	27·067	**1981**	5	1	My	3	·98	3	Je	2	·51	5	Jl	2○	·04	6	Jl	31●	·57	1	Au	30	·10
5083	2039	1904	13A	·8384	9·5061	23·224	**1982**	6	6	Ap	23	·34	7	My	22	·87	2	Je	21○	·40	3	Jl	20●	·93	5	Au	19	·47
5084	2040	1905	14A	·0972	28·1450	21·357	**1983**	7	5	My	12	·24	6	Je	10●○	·77	1	Jl	10	·30	2	Au	8	·83	4	S	7	·36
5085	2041	1906	13A	·3559	17·2533	17·514	**1984**	1	2	Ap	30	·61	4	My	30●	·14	5	Je	28	·67	7	Jl	28	·20	1	Au	26	·73
5086	2042	1907	13A	·6147	6·3616	13·672	**1985**	3	6	Ap	19○	·97	1	My	19	·51	3	Je	18	·04	4	Jl	17	·57	7	S	14	·63
																					6	Au	16	·10				
5087	2043	1908	13A	·8735	25·0004	11·805	**1986**	4	5	My	8	·87	7	Je	7	·40	1	Jl	6	·93	3	Au	5	·46	4	S	3	·99
5088	2044	1909	14A	·1322	14·1087	7·962	**1987**	5	3	Ap	28	·24	4	My	27	·77	6	Je	26	·30	7	Jl	25	·83	2	Au	24	·36
5089	2045	1910	13A	·3910	3·2170	4·119	**1988**	6	7	Ap	16	·61	2	My	16	·14	5	Jl	14	·20	6	Au	12○	·73	1	S	11●	·26
													3	Je	14	·67												
5090	2046	1911	13A	·6497	21·8559	2·253	**1989**	1	6	My	5	·50	1	Je	4	·03	2	Jl	3	·57	4	Au	2○	·10	5	Au	31	·63
5091	2047	1912	13A	·9085	10·9642	25·965	**1990**	2	3	Ap	24	·87	5	My	24	·40	6	Je	22	·93	1	Jl	22●○	·46	2	Au	20	·99
5092	2048	1913	14A	·1672	0·0725	22·122	**1991**	3	1	Ap	14	·24	4	Je	12	·30	5	Jl	11	·83	7	Au	10	·36	1	S	8	·89
									2	My	13	·77																
5093	2049	1914	13A	·4260	10·7114	20·255	**1992**	4	7	My	2	·14	1	My	31○	·67	3	Je	30	·20	4	Jl	29	·73	6	Au	28	·26
5094	2050	1915	13A	·6848	7·8197	16·412	**1993**	6	4	Ap	21	·50	6	My	21●○	·03	7	Je	19	·56	2	Jl	19	·09	3	Au	17	·63
																									5	S	16	·16
5095	2051	1916	13A	·9435	26·4586	14·546	**1994**	7	3	My	10●○	·40	4	Je	8	·93	6	Jl	8	·46	7	Au	6	·99	2	S	5	·52
5096	2052	1917	14A	·2023	15·5669	10·703	**1995**	1	7	Ap	29●	·77	2	My	29	·30	3	Je	27	·83	5	Jl	27	·36	6	Au	25	·89
5097	2053	1918	13A	·4610	4·6752	6·860	**1996**	2	5	Ap	18	·13	6	My	17	·67	1	Je	16	·20	4	Au	14	·26	5	S	12○	·79
																	2	Jl	15	·73								
5098	2054	1919	13A	·7198	23·3141	4·993	**1997**	4	4	My	7	·03	5	Je	5	·56	7	Jl	5	·09	1	Au	3	·62	3	S	2○	·15
5099	2055	1920	13A	·9785	12·4224	1·151	**1998**	5	1	Ap	26	·40	2	My	25	·93	4	Je	24	·46	5	Jl	23	·99	7	Au	22●	·52
5100	2056	1921	14A	·2373	1·5307	24·862	**1999**	6	5	Ap	15	·77	7	My	15	·30	3	Jl	13○	·36	4	Au	11●	·89	6	S	10	·42
													1	Je	13	·83												

TABLE X—A.

Distance of Sun from the Moon's Node at the Commencement of each Solar Year.

Increase for Centuries.

Christian Era.	Kaliyuga.	Days.		Christian Era.	Kaliyuga.	Days.		Increase Yr.	Incr. Days.
B.C. 1	3101	62·91	Modern figures (less the Sodhya of Surya Siddhanta).	**1000**	4101	159·27	Surya Siddhanta without bija but less Sodhya.	**1**	18·63
A.D. 100	3201	20·45		**1100**	4201	116·46		**2**	37·27
200	3301	151·30		**1200**	4301	72·44		**3**	55·90
300	3401	109·18		**1300**	4401	29·63		**4**	74·54
400	3501	65·68		**1400**	4501	159·97		**5**	93·17
500	3601	23·76	Arya Siddhanta (less the Sodhya of Arya Siddhanta).	**1500**	4601	118·20	Surya Siddhanta with bija but less Sodhya.	**6**	111·80
600	3701	154·79		**1600**	4701	75·91		**7**	130·44
700	3801	112·33		**1700**	4801	33·45		**8**	149·07
800	3901	70·04		**1800**	4901	164·12		**9**	167·71
900	4001	27·59		**1900**	5001	120·62		**10**	13·03

The Canons of Eclipses.

A **Solar** Eclipse is certain if ⊙ from Node is between 0 and 15·598 or between 157·714 and 173·312 days.
" " doubtful " " " 15·771 " 18·198 " 157·541 " 155·114 "
" " impossible " " " 18·371 " 154·939 days.

Surya Siddhanta.

Asvina				Kartika				Margasira				A.D.	Pausha				A.D.	Magha				Phalguna				Chaitra			
+ 147·65293				+ 177·18353				+ 206·71411					+ 236·24470					+ 265·77529				+ 295·30588				+324·83647 +354·36705			
+ 9·880				+ 11·856				+ 13·832					+ 15·808					+ 17·784				+ 19·760				+ 21·736 + 23·712			
Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction		Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction	Week-day	Month	Day	Fraction
1	O	5	·37	2	N	30○	·90	4	D	3	·43	**76**	5	Jr	1	·96		7	Jr	31	·49	2	Mr	1	·02	3	Mr	30	·55
5	S	23	·73	7	O	23●	·26	1	N	21	·79		3	D	21	·32	**77**	4	Jr	19	·85	6	F	18	·39	7	Mr	19○	·92
4	O	12	·63	6	N	11	·16	7	D	10	·69	**78**	2	Jr	9	·22		3	F	7	·75	5	Mr	9○	·28	6	Ap	7	·81
2	O	2●	·00	3	O	31	·53	5	N	30	·06		6	D	29	·59	**79**	1	Jr	28	·12	2	F	26●○	·65	4	Mr	28	·18
6	S	21	·36	7	O	20	·89	2	N	19	·43		3	D	18	·96	**80**	5	Jr	17	·49	7	F	16●	·02	1	Mr	16	·55
5	O	9	·26	6	N	7	·79	1	D	7	·32	**81**	2	Jr	5	·85		4	F	4	·38	5	Mr	5	·91	7	Ap	4	·45
2	S	28	·63	4	O	28	·16	5	N	26	·69		7	D	26○	·22	**82**	1	Jr	24	·75	3	F	23	·28	4	Mr	24	·81
{ 7	S	18	·00	3	N	16	·06	4	D	15●○	·59	**83**	6	Jr	14	·12		**Magha Kshaya**				{ 7	F	12	·65	3	Ap	12	·71
{ 1	O	17	·53																			{ 2	Mr	14	·18				
5	O	6	·89	7	N	5	.42	1	D	4●	·95	**84**	3	Jr	3	·49		5	F	2	·02	6	Mr	2	·55	1	Ap	1	·08
3	S	25	·26	4	O	24	.79	6	N	23	·32		7	D	22	·85	**85**	2	Jr	21	·38	3	F	19	·91	5	Mr	21	·44
2	O	14○	·16	3	N	12●	·69	5	D	12	·22	**86**	6	Jr	10	·75		1	F	9	·28	2	Mr	10	·81	4	Ap	9○	·34
6	O	3○	·53	1	N	2	.06	2	D	1	·59		4	D	31	·12	**87**	5	Jr	29	·65	7	F	28	·18	1	Mr	29●	71
3	S	22●	·89	5	O	22	·42	6	N	20	·95		1	D	20	·48	**88**	3	Jr	19	·01	4	F	17	·55	6	Mr	18●	·08
2	O	10	·79	4	N	9	·32	5	D	8	·85	**89**	7	Jr	7	·38		1	F	5○	·91	3	Mr	7	·44	4	Ap	5	·97
7	S	30	·16	1	O	29	·69	3	N	28	·22		4	D	27	·75	**90**	6	Jr	26○	·28	7	F	24	·81	2	Mr	26	·34
4	S	19	·52	6	O	19	·05	7	N	17	·59		2	D	17	·12	**91**	3	Jr	15○	·65	5	F	14	·18	6	Mr	15	·71
3	O	8	·42	4	N	6	·95	6	D	6○	·48	**92**	1	Jr	5	·01		2	F	3	·54	4	Mr	4	·07	5	Ap	2	·61
7	S	26	·79	2	O	26	·32	3	N	24○	·85		5	D	24●	·38	**93**	6	Jr	22	·91	1	F	21	·44	2	Mr	22	·97
6	O	15	·69	1	N	14○	·22	2	D	13	·75	**94**	4	Jr	12	·28		5	F	10	·81	7	Mr	12	·34	1	Ap	10	·87
4	O	5	·05	5	N	3●	·58	7	D	3	·11	**95**	1	Jr	1	·65		3	Jr	31	·18	4	Mr	1	·71	6	Mr	31○	·24
1	S	24	·42	2	O	23●	·95	4	N	22	·48		6	D	22	·01	**96**	7	Jr	20	·54	2	F	19	·07	3	Mr	19○	·60
7	O	12●	·32	1	N	10	·85	3	D	10	·38	**97**	4	Jr	8	·91		6	F	7	·44	7	Mr	8●	·97	2	Ap	7	·50
4	O	1	·69	6	O	31	·22	7	N	29	·75		2	D	29	·28	**98**	3	Jr	27	·81	5	F	26●	·34	6	Mr	27	·87
2	S	21	·05	3	O	20	·58	5	N	19	·11		6	D	18	·64	**99**	1	Jr	17	·17	2	F	15●	·71	4	Mr	17	·24
7	O	9	·95	2	N	8	·48	4	D	8	·01	**20**	5	Jr	6○	·54	**00**	7	F	5	·07	1	Mr	5	·60	3	Ap	4	·13

TABLE X—A.

Distance of Sun from the Moon's Node at the Commencement of each Solar Year.

for Odd Years. Increase for Odd Years.

Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Increase. days.	Yr.	Incr. days.
11	31·66	**21**	44·69	**31**	57·72	**41**	70·75	**51**	83·78	**61**	96·81	**71**	109·84	**81**	122·86	**91**	135·89
12	50·30	**22**	63·33	**32**	76·35	**42**	89·38	**52**	102·41	**62**	115·44	**72**	128·47	**82**	141·50	**92**	154·53
13	68·93	**23**	81·96	**33**	94·99	**43**	108·01	**53**	121·05	**63**	134·07	**73**	147·10	**83**	160·13	**93**	173·16
14	87·56	**24**	100·59	**34**	113·62	**44**	126·65	**54**	139·68	**64**	152·71	**74**	165·74	**84**	5·45	**94**	18·48
15	106·20	**25**	119·23	**35**	132·66	**45**	145·29	**55**	158·31	**65**	171·34	**75**	11·06	**85**	24.08	**95**	37·12
16	124·83	**26**	137·86	**36**	150·89	**46**	163·92	**56**	3·64	**66**	16·66	**76**	29·69	**86**	42·72	**96**	55·75
17	143·47	**27**	156·50	**37**	169·52	**47**	9·24	**57**	22·27	**67**	35·30	**77**	48·33	**87**	61·36	**97**	74·39
18	162·10	**28**	1·82	**38**	14·85	**48**	27·88	**58**	40·90	**68**	53·93	**78**	66·96	**88**	79·99	**98**	93·02
19	7·42	**29**	20·45	**39**	33·48	**49**	46·51	**59**	59·54	**69**	72·57	**79**	85·60	**89**	98·63	**99**	111·65
20	26·06	**30**	39·09	**40**	52·11	**50**	65·14	**60**	78·17	**70**	91·20	**80**	104·23	**90**	117·26		

The Canons of Eclipses.

A **Lunar** Eclipse is certain if ⊙ from Node is between 0 and 10·052 or between 163·260 and 173·312 days.
" " doubtful " " " 10·225 " 13·345 " 163·087 " 159·967 "
" " impossible " " " 13·518 " 159·794 days.

TABLE XI.— LONGEST INTERVAL IN DAYS FROM NEW-MOON TO ENDING MOMENT

[The largest correction is—2·20890 for Nakshatras

NAKSHATRAS.

Names of Nakshatras.	Order	I Ordinarily Vaisakha	Order	II Ordinarily Jyeshta	Order	III Ordinarily Ashada	Order	IV Ordinarily Sravana	Order	V Ordinarily Bhadrapada	Order	VI Ordinarily Asvina	Order	VII Ordinarily Kartika	Order	VIII Ordinarily Margasira
Revati	27	0·1624	3	0·9892	5	0·8041	7	0·6190	9	0·4339	11	0·2489	13	0·0638	16	0·8906
Asvini	1	1·1743	4	2·0011	6	1·8160	8	1·6309	10	1·4459	12	1·2608	14	1·0757	17	1·9025
Bharani	2	2·1862	5	3·0130	7	2·8279	9	2·6428	11	2·4578	13	2·2727	15	2·0876	18	2·9144
Krittika	3	3·1981	6	4·0249	8	3·8398	10	3·6548	12	3·4697	14	3·2846	16	3·0995	19	3·9263
Rohini	4	4·2100	7	5·0368	9	4·8518	11	4·6667	13	4·4816	15	4·2965	17	4·1114	20	4·9383
Mrigasira	5	5·2219	8	6·0488	10	5·8637	12	5·6786	14	5·4935	16	5·3084	18	5·1233	21	5·9502
Ardhra	6	6·2338	9	7·0607	11	6·8756	13	6·6905	15	6·5054	17	6·3203	19	6·1353	22	6·9621
Punarvasu	7	7·2458	10	8·0726	12	7·8875	14	7·7024	16	7·5173	18	7·3323	20	7·1472	23	7·9740
Pushya	8	8·2577	11	9·0845	13	8·8994	15	8.7143	17	8·5292	19	8·3442	21	8·1591	24	8·9859
Aslesha	9	9·2696	12	10·0964	14	9·9113	16	9·7262	18	9·5412	20	9·3561	22	9·1710	25	9·9978
Magha	10	10·2815	13	11·1083	15	10·9232	17	10·7382	19	10·5531	21	10·3680	23	10·1829	26	11·0097
Purna Phalguni ...	11	11·2934	14	12·1202	16	11·9352	18	11·7501	20	11·5650	22	11·3799	24	11·1948	27	12·0217
Uttara Phalguni ...	12	12·3053	15	13·1322	17	12·9471	19	12·7620	21	12·5769	23	12·3918	25	12·2067	1	13·0336
Hasta	13	13·3172	16	14·1441	18	13·9590	20	13·7739	22	13·5888	24	13·4037	26	13·2187	2	14·0455
Chittra	14	14·3292	17	15·1567	19	14·9709	21	14·7858	23	14·6007	25	14·4156	27	14·2306	3	15·0574
Svati	15	15·3411	18	16·1679	20	15·9828	22	15·7977	24	15·6126	26	15·4276	1	15·2425	4	16·0693
Visakha	16	16·3530	19	17·1798	21	16·9947	23	16·8096	25	16·6246	27	16·4395	2	16·2544	5	17·0812
Anuradha	17	17·3649	20	18·1917	22	18·0066	24	17·8216	26	17·6365	1	17·4514	3	17·2663	6	18·0931
Jyeshtha	18	18·3768	21	19·2036	23	19·0186	25	18·8335	27	18·6484	2	18·4633	4	18·2782	7	19·1051
Mula	19	19·3887	22	20·2156	24	20·0305	26	19·8454	1	19·6603	3	19·4752	5	19·2901	8	20·1170
Purva Ashada	20	20·4006	23	21·2275	25	21·0424	27	20·8573	2	20·6722	4	20·4871	6	20·3020	9	21·1289
Uttara Ashada	21	21·4126	24	22·2394	26	22·0543	1	21·8692	3	21·6841	5	21·4990	7	21·3140	10	22·1408
Sravana	22	22 4245	25	23·2513	27	23·0662	2	22·8811	4	22·6960	6	22·5110	8	22·3259	11	23·1527
Sravishta or Danishta ...	23	23·4364	26	24·2632	1	24·0781	3	23·8930	5	23·7080	7	23·5229	9	23·3378	12	24·1646
Satabhisaj or Sataraka ...	24	24·4483	27	25·2751	2	25·0900	4	24·9050	6	24·7199	8	24·5348	10	24·3497	13	25·1765
Purva Bhadrapada ...	25	25·4602	1	26·2870	3	26·1020	5	25·9169	7	25·7318	9	25·5467	11	25·3616	14	26·1884
Uttara Bhadrapada ...	26	26·4721	2	27·2990	4	27·1139	6	26·9288	8	26·7437	10	26·5586	12	26·3735	15	27·2004
Revati	27	27·4840	3	28·3109	5	28·1258	7	27·9407	9	27·7556	11	27·5705	13	27·3854	16	28·2123
	1	28·4960	4	29·3228	6	29·1377	8	28·9526	10	28·7675	12	28·5824	14	28·3974	17	29·2242
	2	29·5079											15	29·4093		

YOGAS.

Names of Yogas.	Order	I	Order	II	Order	III	Order	IV	Order	V	Order	VI	Order	VII	Order	VIII
Vaidhriti	27	0·3021	5	0·8992	9	0·5548	13	0·2104	18	0·8075	22	0·4631	26	0·1187	4	0·7157
Vishkambha	1	1·2436	6	1·8407	10	1·4963	14	1·1519	19	1·7490	23	1·4046	27	1·0601	5	1·6572
Priti	2	2·1851	7	2·7822	11	2·4378	15	2·0934	20	2·6905	24	2·3460	1	2·0016	6	2·5987
Ayushmat	3	3·1266	8	3·7237	12	3·3793	16	3·0349	21	3·6319	25	3·2875	2	2·9431	7	3·5402
Saubhagya	4	4·0681	9	4·6652	13	4·3208	17	3·9764	22	4·5734	26	4·2290	3	3·8846	8	4·4817
Sobhana	5	5.0096	10	5·6067	14	5·2623	18	4·9178	23	5·5149	27	5·1705	4	4·8261	9	5·4232
Atiganda	6	5·9511	11	6·5482	15	6·2037	19	5·8593	24	6·4564	1	6·1120	5	5·7676	10	6·3647
Sukarman	7	6·8926	12	7·4896	16	7·1452	20	6·8008	25	7·3979	2	7·0535	6	6·7091	11	7·3062
Dhriti	8	7·8341	13	8·4311	17	8·0867	21	7·7423	26	8·3394	3	7·9950	7	7·6506	12	8·2477
Sula	9	8·7755	14	9·3726	18	9·0282	22	8·6838	27	9·2809	4	8·9365	8	8·5921	13	9·1891
Ganda	10	9·7170	15	10·3141	19	9·9697	23	9·6253	1	10·2224	5	9·8780	9	9·5335	14	10·1306
Vriddhi	11	10·6585	16	11·2556	20	10·9112	24	10·5668	2	11·1639	6	10·8194	10	10·4750	15	11·0721
Dhruva	12	11·6000	17	12·1971	21	11·8527	25	11·5083	3	12·1053	7	11·7609	11	11·4165	16	12·0136
Vyaghata	13	12·5415	18	13·1386	22	12·7942	26	12·4498	4	13·0468	8	12·7024	12	12·3580	17	12·9551
Harshana	14	13·4830	19	14·0800	23	13·7357	27	13·3912	5	13·9813	9	13·6439	13	13·2995	18	13·8966
Vajra	15	14·4245	20	15·0216	24	14·6771	1	14·3327	6	14·9298	10	14·5854	14	14·2410	19	14·8381
Siddhi	16	15·3660	21	15·9630	25	15·6186	2	15·2742	7	15·8713	11	15·5269	15	15·1825	20	15·7796
Vyatipata	17	16·3075	22	16·9045	26	16·5601	3	16·2157	8	16·8128	12	16·4684	16	16·1240	21	16·7211
Variyas	18	17·2489	23	17·8460	27	17·5016	4	17·1572	9	17·7543	13	17·4099	17	17·0655	22	17·6625
Parigha	19	18·1904	24	18·7875	1	18·4431	5	18·0987	10	18·6958	14	18·3514	18	18·0070	23	18·6040
Siva	20	19·1319	25	19·7290	2	19·3846	6	19·0402	11	19·6373	15	19·2929	19	18·9484	24	19·5455
Siddha	21	20·0734	26	20·6705	3	20·3261	7	19·9817	12	20·5788	16	20·2343	20	19·8899	25	20·4870
Sadhya	22	21·0149	27	21·6120	4	21·2676	8	20·9232	13	21·5202	17	21·1758	21	20·8314	26	21·4285
Subha	23	21·9564	1	22·5535	5	22·2091	9	21·8647	14	22·4617	18	22·1173	22	21·7729	27	22·3700
Sukla	24	22·8979	2	23·4950	6	23·1506	10	22·8061	15	23·4032	19	23·0588	23	22.7144	1	23·3115
Brahman	25	23·8394	3	24·4665	7	24·0920	11	23·7476	16	24·3447	20	24·0003	24	23·6559	2	24·2530
Indra	26	24·7809	4	25·3780	8	25·0335	12	24·6891	17	25·2862	21	24·9418	25	24·5974	3	25·1945
Vaidhriti	27	25·7224	5	26·3194	9	25·8750	13	25·6306	18	26·2277	22	25·8833	26	25·5389	4	26·1360
	1	26·6638	6	27·2609	10	26·9165	14	26·5721	19	27·1692	23	26·8248	27	26·4804	5	27·0774
	2	27·6053	7	28·2024	11	27·8580	15	27·5136	20	28·1107	24	27·7663	1	27·4219	6	28·0189
	3	28·5468	8	29·1439	12	28·7995	16	28·4551	21	29·0522	25	28·7078	2	28·3633	7	28·9604
	4	29·4883					17	29·3966					3	29·3048		

OF EACH NAKSHATRA AND YOGA

and—4·11036 for Yogas.]

NAKSHATRAS.

Order	IX Ordinarily Pausha	Order	X Ordinarily Magha	Order	XI Ordinarily Phalguna	Order	XII Ordinarily Chaitra when no Adhika Masa	Order	XIII Chaitra when there is Adhika Masa
18	0·7055	20	0·5204	22	0·3353	24	0·1503	27	0·9771
19	1·7174	21	1·5323	23	1·3473	25	1·1622	1	1·9890
20	2·7293	22	2·5443	24	2·3592	26	2·1741	2	3·0009
21	3·7413	23	3·5562	25	3·3711	27	3·1860	3	4·0128
22	4·7532	24	4·5682	26	4·3830	1	4·1979	4	5·0247
23	5·7651	25	5·5800	27	5·3949	2	5·2098	5	6·0367
24	6·7770	26	6·5919	1	6·4068	3	6·2217	6	7·0486
25	7·7889	27	7·6038	2	7·4187	4	7·2337	7	8·0605
26	8·8008	1	8·6157	3	8·4307	5	8·2456	8	9·0724
27	9·8127	2	9·6277	4	9·4426	6	9·2575	9	10·0843
1	10·8247	3	10·6396	5	10·4545	7	10·2694	10	11·0962
2	11·8366	4	11·6515	6	11·4664	8	11·2813	11	12·1081
3	12·8485	5	12·6634	7	12·4783	9	12·2932	12	13·1201
4	13·8604	6	13·6753	8	13·4902	10	13·3051	13	14·1320
5	14·8723	7	14·6872	9	14·5021	11	14·3171	14	15·1439
6	15·8842	8	15·6991	10	15·5141	12	15·3290	15	16·1558
7	16·8961	9	16·7111	11	16·5260	13	16·3409	16	17·1677
8	17·9081	10	17·7230	12	17·5379	14	17·3528	17	18·1796
9	18·9200	11	18·7349	13	18·5498	15	18·3647	18	19·1915
10	19·9319	12	19·7468	14	19·5617	16	19·3766	19	20·2035
11	20·9438	13	20·7587	15	20·5736	17	20·3885	20	21·2154
12	21·9557	14	21·7706	16	21·5855	18	21·4005	21	22·2273
13	22·9676	15	22·7825	17	22·5975	19	22·4124	22	23·2392
14	23·9795	16	23·7945	18	23·6094	20	23·4243	23	24·2511
15	24·9915	17	24·8064	19	24·6213	21	24·4362	24	25·2630
16	26·0034	18	25·8183	20	25·6332	22	25·4481	25	26·2749
17	27·0153	19	26·8302	21	26·6451	23	26·4600	26	27·2869
18	28·0272	20	27·8421	22	27·6570	24	27·4719	27	28·2988
19	29·0391	21	28·8540	23	28·6689	25	28·4839	1	29·3107
						26	29·4958		

YOGAS.

Order	IX	Order	X	Order	XI	Order	XII	Order	XIII
8	0·3713	12	0·0269	17	0·6240	21	0·2796	26	0·8767
9	1·3128	13	0·9684	18	1·5655	22	1·2211	27	1·8182
10	2·2543	14	1·9099	19	2·5070	23	2·1626	1	2·7596
11	3·1958	15	2·8514	20	3·4485	24	3·1041	2	3·7011
12	4·1373	16	3·7929	21	4·3900	25	4·0455	3	4·6426
13	5·0788	17	4·7344	22	5·3314	26	4·9870	4	5·5841
14	6·0203	18	5·6759	23	6·2729	27	5·9285	5	6·5256
15	6·9618	19	6·6173	24	7·2144	1	6·8700	6	7·4671
16	7·9032	20	7·5588	25	8·1559	2	7·8115	7	8·4086
17	8·8447	21	8·5003	26	9·0974	3	8·7530	8	9·3501
18	9·7862	22	9·4418	27	10·0389	4	9·6945	9	10·2916
19	10·7277	23	10·3833	1	10·9804	5	10·6360	10	11·2330
20	11·6692	24	11·3248	2	11·9219	6	11·5775	11	12·1745
21	12·6107	25	12·2663	3	12·8634	7	12·5189	12	13·1160
22	13·5522	26	13·2078	4	13·8048	8	13·4604	13	14·0575
23	14·4937	27	14·1493	5	14·7463	9	14·4019	14	14·9990
24	15·4352	1	15·0907	6	15·6878	10	15·3434	15	15·9405
25	16·3766	2	16·0322	7	16·6293	11	16·2849	16	16·8820
26	17·3181	3	16·9737	8	17·5708	12	17·2264	17	17·8235
27	18·2596	4	17·9152	9	18·5123	13	18·1679	18	18·7650
1	19·2011	5	18·8567	10	19·4538	14	19·1094	19	19·7065
2	20·1426	6	19·7982	11	20·3953	15	20·0509	20	20·6479
3	21·0841	7	20·7397	12	21·3368	16	20·9924	21	21·5894
4	22·0256	8	21·6812	13	22·2783	17	21·9338	22	22·5309
5	22·9671	9	22·6227	14	23·2197	18	22·8753	23	23·4724
6	23·9086	10	23·5646	15	24·1612	19	23·8168	24	24·4139
7	24·8501	11	24·5056	16	25·1027	20	24·7583	25	25·3554
8	25·7915	12	25·4471	17	26·0442	21	25·6999	26	26·2969
9	26·7330	13	26·3886	18	26·9857	22	26·6413	27	27·2384
10	27·6745	14	27·3301	19	27·9272	23	27·5828	1	28·1799
11	28·6160	15	28·2716	20	28·8687	24	28·5243	2	29·1214
		16	29·2131			25	29·4658		

ANNUAL CORRECTION

Argument :—Date of appearance of 1st New-Moon in each Solar Year according to Table X.

NAKSHATRAS.

Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.
1	·07480	·01	·00075	·30	·02244	·59	·04413	·88	·06582
2	·14960	.02	·00150	·31	·02319	·60	·04488	·89	·06657
3	·22440	·03	·00224	·32	·02394	·61	·04563	·90	·06732
4	·29920	·04	·00299	·33	·02468	·62	·04638	·91	·06807
5	·37400	·05	·00374	·34	·02543	·63	·04712	·92	·06882
6	·44880	·06	·00449	·35	·02618	·64	·04787	·93	·06956
7	·52361	·07	·00524	·36	·02693	·65	·04862	·94	·07031
8	·59841	·08	.00598	·37	·02768	·66	·04937	·95	·07106
9	·67321	·09	·00673	·38	·02342	·67	·05012	·96	·07181
10	·74801	·10	·00748	·39	·02917	·68	·05086	·97	·07256
11	·82281	·11	·00823	·40	·02992	·69	·05161	·98	·07330
12	·89761	·12	·00898	·41	·03067	·70	·05236	·99	·07405
13	·97241	·13	·00972	·42	·03142	·71	·05311		
14	1·04721	·14	·01047	·43	·03216	·72	·05386		
15	1·12201	·15	·01122	·44	·03291	·73	·05460		
16	1·19681	·16	·01197	·45	·03366	·74	·05535		
17	1·27161	·17	·01272	·46	·03441	·75	·05610		
18	1·34641	·18	·01346	·47	·03516	·76	·05685		
19	1·42121	·19	·01421	·48	·03590	·77	·05760		
20	1·49602	·20	·01496	·49	·03665	·78	·05834		
21	1·57082	·21	·01571	·50	·03740	·79	·05909		
22	1·64562	·22	·01646	·51	·03815	·80	·05984		
23	1·72042	·23	·01720	·52	·03890	·81	·06059		
24	1·79522	·24	·01795	·53	·03964	·82	·06134		
25	1·87002	·25	·01870	·54	·04039	·83	·06208		
26	1·94482	·26	·01945	.55	·04114	·84	·06283		
27	2·01962	·27	·02020	.56	·04189	·85	·06358		
28	2·09442	·28	·02094	.57	·04264	·86	·06433		
29	2·16922	·29	·02169	.58	·04338	·87	·06508		

YOGAS.

Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.	Arg.	Corrn.
1	0·13919	·01	·00139	·30	·04176	·59	·08212	·88	·12249
2	0·27838	·02	·00278	·31	·04315	·60	·08351	·89	·12388
3	0·41757	·03	·00417	·32	·04454	·61	·08491	·90	·12527
4	0·55676	·04	·00557	·33	·04593	·62	·08630	·91	·12666
5	0·69595	·05	·00696	·34	·04732	·63	·08769	·92	·12805
6	0·83514	·06	·00835	·35	·04872	·64	·08908	·93	·12945
7	0·97433	·07	·00974	·36	·05011	·65	·09047	·94	·13084
8	1·11352	·08	·01113	·37	·05150	·66	·09186	·95	·13223
9	1·25271	·09	·01253	·38	·05289	·67	·09326	·96	·13362
10	1·39190	·10	·01392	·39	·05428	·68	·09465	·97	·13601
11	1·53109	·11	·01530	·40	·05568	·69	·09604	·98	·13641
12	1·67028	·12	·01670	·41	·05707	·70	·09743	·99	·13780
13	1·80947	·13	·01809	·42	·05846	·71	·09882		
14	1·94866	·14	·01949	·43	·05985	·72	·10022		
15	2·08785	·15	·02088	·44	·06124	·73	·10161		
16	2·22704	·16	·02227	·45	·06263	·74	·10300		
17	2·36623	·17	·02366	·46	·06403	·75	·10439		
18	2·50542	·18	·02505	·47	·06542	·76	·10578		
19	2·64461	·19	·02645	·48	·06681	·77	·10798		
20	2·78380	·20	.02784	·49	·06820	·78	·10851		
21	2·92299	·21	.02923	·50	·06959	·79	·10996		
22	3·06218	·22	·03063	·51	·07098	·80	·11135		
23	3·20137	·23	·03201	·52	·07238	·81	·11274		
24	3·34056	·24	·03340	·53	·07377	·82	·11413		
25	3·47975	·25	·03480	·54	·07516	·83	·11553		
26	3·61894	·26	·03619	·55	·07655	·84	·11692		
27	3·75813	·27	·03758	·56	·07795	·85	·11831		
28	3·89732	·28	·03897	·57	·07934	·86	·11970		
29	4·03651	·29	·04036	·58	·08073	·87	·12109		

TABLE XI—A. LONGEST INTERVAL IN DAYS, GHATIKAS AND PALAS

The largest correction for

NAKSHATRAS.

Names of Nakshatras.	Order	Ordinarily Vaisakha I d. g. p.	Order	Ordinarily Jyeshta II d. g. p.	Order	Ordinarily Ashada III d. g. p.	Order	Ordinarily Sravana IV d. g. p.	Order	Ordinarily Bhadrapada V d. g. p.
Revati	27	0 9 45	3	0 59 21	5	0 43 15	7	0 37 8	9	0 26 2
Asvini	1	1 10 28	4	2 0 4	6	1 48 58	8	1 37 51	10	1 26 45
Bharani	2	2 11 10	5	3 0 47	7	2 49 41	9	2 38 34	11	2 27 28
Krittika (*Tamil* Kiruttigai)	3	3 11 53	6	4 1 30	8	3 50 23	10	3 39 17	12	3 28 11
Rohini	4	4 12 36	7	5 2 13	9	4 51 7	11	4 40 0	13	4 28 54
Mirgasira (*Tamil* Mirugasiram)	5	5 13 19	8	6 2 56	10	5 51 49	12	5 40 43	14	5 29 37
Ardhra (*Tamil* arudra or Tiruvadirai)	6	6 14 2	9	7 3 39	11	6 52 32	13	6 41 26	15	6 30 20
Punarvasu	7	7 14 45	10	8 4 21	12	7 53 15	14	7 42 9	16	7 31 2
Pushya (*Tamil* Pusam)	8	8 15 28	11	9 5 4	13	8 53 58	15	8 42 52	17	8 31 45
Aslesha (*Tamil* Ayilyam)	9	9 16 11	12	10 5 47	14	9 54 41	16	9 43 34	18	9 32 28
Magha (*Tamil* Magham)	10	10 16 53	13	11 6 30	15	10 55 24	17	10 44 18	19	10 33 11
Purva Phalguni (*Tamil* Puram)	11	11 17 36	14	12 7 13	16	11 56 7	18	11 45 0	20	11 33 54
Uttara Phalguni (*Tamil* Uttiram)	12	12 18 19	15	13 7 56	17	12 56 50	19	12 45 43	21	12 34 37
Hasta (*Tamil* Hastam)	13	13 19 2	16	14 8 39	18	13 57 32	20	13 46 26	22	13 35 20
Chittra (*Tamil* Chittirai)	14	14 19 45	17	15 9 24	19	14 58 15	21	14 47 9	23	14 36 3
Svati	15	15 20 28	18	16 10 5	20	15 58 58	22	15 47 52	24	15 36 45
Visakha (*Tamil* Visakam)	16	16 21 11	19	17 10 47	21	16 59 41	23	16 48 35	25	16 37 20
Anuradha (*Tamil* Anusham)	17	17 21 54	20	18 11 30	22	18 0 24	24	17 49 18	26	17 38 11
Jyeshta (*Tamil* Kettai)	18	18 22 37	21	19 12 13	23	19 1 7	25	18 50 1	27	18 38 54
Mula (*Tamil* Mulam)	19	19 23 19	22	20 12 56	24	20 1 50	26	19 50 44	1	19 39 37
Purva Ashada (*Tamil* Puradam)	20	20 24 2	23	21 13 39	25	21 2 33	27	20 51 26	2	20 40 20
Uttara Ashada (*Tamil* Uttiradam)	21	21 24 45	24	22 14 22	26	22 3 16	1	21 52 9	3	21 41 3
Sravana (*Tamil* Tiruvonam)	22	22 25 28	25	23 15 5	27	23 3 58	2	22 52 52	4	22 41 46
Sravishta or Danishta (*Tamil* Avittam)	23	23 26 11	26	24 15 48	1	24 4 41	3	23 53 35	5	23 42 29
Satabhisaj or Sataraka (*Tamil* Sadayam)	24	24 26 54	27	25 16 30	2	25 5 24	4	24 54 18	6	24 43 2
Purva Bhadrapada (*Tamil* Purattadi)	25	25 27 37	1	26 17 13	3	26 6 7	5	25 55 1	7	25 43 55
Uttara Bhadrapada (*Tamil* Uttirattadi)	26	26 28 20	2	27 17 56	4	27 6 50	6	26 55 44	8	26 44 37
Revati	27	27 29 2	3	28 18 39	5	28 7 33	7	27 56 27	9	27 45 20
	1	28 29 46	4	29 19 22	6	29 8 16	8	28 57 9	10	28 46 3
	2	29 30 29								

YOGAS.

Names of Yogas.	Order	I	Order	II	Order	III	Order	IV	Order	V
Vaidhriti	27	0 18 8	5	0 53 57	9	0 33 17	13	0 12 38	18	0 48 27
Vishkamba	1	1 14 37	6	1 50 27	10	1 29 47	14	1 9 7	19	1 44 56
Priti	2	2 11 6	7	2 46 56	11	2 26 16	15	2 5 36	20	2 41 26
Ayushmat	3	3 7 36	8	3 43 25	12	3 22 46	16	3 2 6	21	3 37 55
Saubhagya	4	4 4 5	9	4 39 55	13	4 19 15	17	3 58 35	22	4 34 24
Sobhana	5	5 0 35	10	5 36 24	14	5 15 44	18	4 55 4	23	5 30 54
Atiganda	6	5 57 4	11	6 32 54	15	6 12 13	19	5 51 34	24	6 27 23
Sukarman	7	6 53 33	12	7 29 23	16	7 8 43	20	6 48 3	25	7 23 53
Dhriti	8	7 50 3	13	8 25 52	17	8 5 12	21	7 44 32	26	8 20 22
Sula	9	8 46 32	14	9 22 21	18	9 1 42	22	8 41 2	27	9 16 51
Ganda	10	9 43 1	15	10 18 51	19	9 58 11	23	9 37 31	1	10 13 21
Vriddhi	11	10 39 31	16	11 15 20	20	10 54 40	24	10 34 1	2	11 9 50
Dhruva	12	11 36 0	17	12 11 50	21	11 51 10	25	11 30 30	3	12 6 19
Vyaghata	13	12 32 29	18	13 8 19	22	12 47 39	26	12 26 59	4	13 2 49
Harshana	14	13 28 59	19	14 4 48	23	13 44 9	27	13 23 28	5	13 59 18
Vajra	15	14 25 28	20	15 1 18	24	14 40 38	1	14 19 58	6	14 55 47
Siddhi	16	15 21 58	21	15 57 47	25	15 37 7	2	15 16 27	7	15 52 17
Vyatipata	17	16 18 27	22	16 54 16	26	16 33 36	3	16 12 57	8	16 48 46
Variyas	18	17 14 56	23	17 50 46	27	17 30 6	4	17 9 26	9	17 45 16
Parigha	19	18 11 26	24	18 47 15	1	18 26 35	5	18 5 55	10	18 41 45
Siva	20	19 7 55	25	19 43 44	2	19 23 5	6	19 2 25	11	19 38 14
Siddha	21	20 4 24	26	20 40 14	3	20 19 34	7	19 58 54	12	20 34 44
Sadhya	22	21 0 54	27	21 36 43	4	21 16 3	8	20 55 24	13	21 31 13
Subha	23	21 57 23	1	22 33 13	5	22 12 33	9	21 51 53	14	22 27 42
Sukla	24	22 53 53	2	23 29 42	6	23 9 2	10	22 48 22	15	23 24 12
Brahman	25	23 50 22	3	24 27 59	7	24 5 31	11	23 44 51	16	24 20 41
Indra	26	24 46 51	4	25 22 41	8	25 2 1	12	24 41 21	17	25 17 10
Vaidhriti	27	25 43 21	5	26 19 10	9	25 58 30	13	25 37 50	18	26 13 40
	1	26 39 50	6	27 15 39	10	26 54 59	14	26 34 20	19	27 10 9
	2	27 36 19	7	28 12 9	11	27 51 29	15	27 30 49	20	28 6 39
	3	28 32 49	8	29 8 38	12	28 47 58	16	28 27 18	21	29 3 8
	4	29 29 18					17	29 23 48		

FROM NEW-MOON TO ENDING MOMENT OF EACH NAKSHATRA AND YOGA.

Nakshatras is—2d., 12gh., 32p, and—4d, 6gh, 38p, for yogas.

NAKSHATRAS.

Order	Ordinarily Asvina VI	Order	Ordinarily Kartika VII	Order	Ordinarily Margasira VIII	Order	Ordinarily Pausha IX	Order	Ordinarily Magha X	Order	Ordinarily Phalguna XI	Order	Chaitra, when no Adhika Masam. XII	Order	Chaitra when there is Adhika Masam. XIII
	d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.		d. g. p.
11	0 14 56	13	0 3 50	16	0 53 26	18	0 42 20	20	0 31 14	22	0 20 7	24	0 9 1	27	0 58 38
12	1 15 39	14	1 4 33	17	1 54 9	19	1 43 3	21	1 31 56	23	1 20 50	25	1 9 44	1	1 59 20
13	2 16 22	15	2 5 15	18	2 54 52	20	2 43 46	22	2 32 40	24	2 21 33	26	2 10 27	2	3 0 3
14	3 17 5	16	3 5 58	19	3 55 35	21	3 44 29	23	3 33 22	25	3 22 16	27	3 11 10	3	4 0 46
15	4 17 47	17	4 6 41	20	4 56 18	22	4 45 12	24	4 34 6	26	4 22 59	1	4 11 53	4	5 1 29
16	5 18 30	18	5 7 24	21	5 57 1	23	5 45 54	25	5 34 48	27	5 23 42	2	5 12 35	5	6 2 12
17	6 19 13	19	6 8 7	22	6 57 44	24	6 46 37	26	6 35 31	1	6 24 25	3	6 13 18	6	7 2 55
18	7 19 56	20	7 8 50	23	7 58 26	25	7 47 20	27	7 36 14	2	7 25 7	4	7 14 1	7	8 3 38
19	8 20 3	21	8 9 33	24	8 59 9	26	8 48 3	1	8 36 57	3	8 25 51	5	8 14 44	8	9 4 21
20	9 21 22	22	9 10 16	25	9 59 52	27	9 48 46	2	9 37 40	4	9 26 33	6	9 15 27	9	10 5 4
21	10 22 5	23	10 10 59	26	11 0 35	1	10 49 29	3	10 38 23	5	10 27 16	7	10 16 10	10	11 5 46
22	11 22 48	24	11 11 41	27	12 1 18	2	11 50 12	4	11 39 5	6	11 27 59	8	11 16 53	11	12 6 29
23	12 23 31	25	12 12 24	1	13 2 1	3	12 50 55	5	12 39 48	7	12 28 42	9	12 17 36	12	13 7 12
24	13 24 13	26	13 13 7	2	14 2 44	4	13 51 38	6	13 40 31	8	13 29 25	10	13 18 18	13	14 7 55
25	14 24 56	27	14 13 50	3	15 3 27	5	14 52 20	7	14 41 14	9	14 30 8	11	14 19 2	14	15 8 38
26	15 25 39	1	15 14 33	4	16 4 9	6	15 53 3	8	15 41 57	10	15 30 51	12	15 19 44	15	16 9 21
27	16 26 22	2	16 15 16	5	17 4 52	7	16 53 46	9	16 42 40	11	16 31 34	13	16 20 27	16	17 10 4
1	17 27 5	3	17 15 59	6	18 5 35	8	17 54 29	10	17 43 23	12	17 32 17	14	17 21 10	17	18 10 47
2	18 27 48	4	18 16 42	7	19 6 18	9	18 55 12	11	18 44 6	13	18 32 59	15	18 21 53	18	19 11 29
3	19 28 31	5	19 17 24	8	20 7 1	10	19 55 55	12	19 44 49	14	19 33 42	16	19 22 36	19	20 12 13
4	20 29 14	6	20 18 7	9	21 7 44	11	20 56 38	13	20 45 31	15	20 34 25	17	20 23 19	20	21 12 56
5	21 29 56	7	21 18 50	10	22 8 27	12	21 57 21	14	21 46 14	16	21 35 8	18	21 24 2	21	22 13 38
6	22 30 40	8	22 19 33	11	23 9 10	13	22 58 3	15	22 46 57	17	22 35 51	19	22 24 45	22	23 14 21
7	23 31 23	9	23 20 16	12	24 9 53	14	23 58 46	16	23 47 40	18	23 36 34	20	23 25 28	23	24 15 4
8	24 32 5	10	24 20 59	13	25 10 35	15	24 59 29	17	24 48 23	19	24 37 17	21	24 26 10	24	25 15 47
9	25 32 48	11	25 21 42	14	26 11 18	16	25 0 12	18	25 49 6	20	25 38 0	22	25 26 53	25	26 16 30
10	26 33 31	12	26 22 25	15	27 12 1	17	26 0 55	19	26 49 49	21	26 38 42	23	26 27 36	26	27 17 13
11	27 34 14	13	27 23 8	16	28 12 44	18	27 1 38	20	27 50 32	22	27 39 25	24	27 28 19	27	28 17 56
12	28 34 57	14	28 23 51	17	29 13 27	19	28 2 21	21	28 51 14	23	28 40 8	25	28 29 2	1	29 18 39
		15	29 24 34									26	29 29 45		

YOGAS.

Order	VI	Order	VII	Order	VIII	Order	IX	Order	X	Order	XI	Order	XII	Order	XIII
22	0 27 47	26	0 7 7	4	0 42 57	8	0 22 17	12	0 1 37	17	0 37 26	21	0 16 47	26	0 52 36
23	1 24 17	27	1 3 36	5	1 39 26	9	1 18 46	13	0 58 6	18	1 33 56	22	1 13 16	27	1 49 6
24	2 20 46	1	2 0 6	6	2 35 55	10	2 15 16	14	1 54 36	19	2 30 25	23	2 9 45	1	2 45 35
25	3 17 15	2	2 56 35	7	3 32 25	11	3 11 45	15	2 51 5	20	3 26 55	24	3 6 15	2	3 42 4
26	4 13 44	3	3 53 5	8	4 28 54	12	4 8 14	16	3 47 35	21	4 23 24	25	4 2 44	3	4 38 33
27	5 10 14	4	4 49 34	9	5 25 24	13	5 4 44	17	4 44 4	22	5 19 53	26	4 59 13	4	5 35 3
1	6 6 43	5	5 46 3	10	6 21 53	14	6 1 13	18	5 40 33	23	6 16 23	27	5 55 43	5	6 31 32
2	7 3 13	6	6 42 33	11	7 18 22	15	6 57 43	19	6 37 2	24	7 12 52	1	6 52 12	6	7 28 2
3	7 59 42	7	7 39 2	12	8 14 52	16	7 54 12	20	7 33 32	25	8 9 21	2	7 48 41	7	8 24 31
4	8 56 11	8	8 35 32	13	9 11 21	17	8 50 41	21	8 30 1	26	9 5 51	3	8 45 11	8	9 21 0
5	9 52 41	9	9 32 1	14	10 7 50	18	9 47 10	22	9 26 31	27	10 2 20	4	9 41 40	9	10 17 30
6	10 49 10	10	10 28 30	15	11 4 20	19	10 43 40	23	10 23 0	1	10 58 50	5	10 38 10	10	11 13 23
7	11 45 39	11	11 24 59	16	12 0 49	20	11 40 9	24	11 19 29	2	11 55 19	6	11 34 39	11	12 10 28
8	12 42 9	12	12 21 29	17	12 57 18	21	12 36 39	25	12 15 59	3	12 51 48	7	12 31 8	12	13 6 58
9	13 38 38	13	13 17 58	18	13 53 48	22	13 33 8	26	13 12 28	4	13 48 17	8	13 27 38	13	14 3 27
10	14 35 8	14	14 14 28	19	14 50 17	23	14 29 37	27	14 8 58	5	14 44 47	9	14 24 7	14	14 59 56
11	15 31 37	15	15 10 57	20	15 46 47	24	15 26 7	1	15 5 27	6	15 41 16	10	15 20 36	15	15 56 26
12	16 28 6	16	16 7 26	21	16 43 16	25	16 22 36	2	16 1 56	7	16 37 46	11	16 17 6	16	16 52 55
13	17 24 36	17	17 3 56	22	17 39 45	26	17 19 5	3	16 58 25	8	17 34 15	12	17 13 35	17	17 49 25
14	18 21 5	18	18 0 25	23	18 36 14	27	18 15 35	4	17 54 55	9	18 30 44	13	18 10 5	18	18 45 54
15	19 17 35	19	18 56 54	24	19 32 44	1	19 12 4	5	18 51 24	10	19 27 14	14	19 6 34	19	19 42 23
16	20 13 26	20	19 53 24	25	20 29 13	2	20 8 33	6	19 47 54	11	20 23 43	15	20 3 3	20	20 38 53
17	21 10 33	21	20 49 53	26	21 25 43	3	21 5 3	7	20 44 23	12	21 20 13	16	20 59 33	21	21 35 22
18	22 7 2	22	21 46 23	27	22 22 12	4	22 1 32	8	21 40 52	13	22 16 42	17	21 56 2	22	22 31 51
19	23 3 32	23	22 42 52	1	23 18 41	5	22 58 2	9	22 37 22	14	23 13 11	18	22 52 31	23	23 28 21
20	24 0 1	24	23 39 21	2	24 15 11	6	23 54 31	10	23 33 53	15	24 9 40	19	23 49 1	24	24 24 50
21	24 56 31	25	24 35 51	3	25 11 40	7	24 51 0	11	24 30 20	16	25 6 10	20	24 45 30	25	25 21 20
22	25 53 0	26	25 32 20	4	26 8 10	8	25 47 29	12	25 26 50	17	26 2 39	21	25 42 0	26	26 17 49
23	26 49 29	27	26 28 50	5	27 4 39	9	26 43 59	13	26 23 19	18	26 59 9	22	26 38 29	27	27 14 18
24	27 45 59	1	27 25 19	6	28 1 8	10	27 40 28	14	27 19 48	19	27 55 38	23	27 34 58	1	28 10 48
25	28 42 28	2	28 21 48	7	28 57 38	11	28 36 58	15	28 16 18	20	28 52 7	24	28 31 28	2	29 7 17
		3	29 18 17					16	29 12 47			25	29 27 57		

TABLE XII.—EPHEMERIS FOR BENGAL.

Dates of Commencement of Bengal Solar Months, A. D. 1840 to A. D. 1920.

A.D.	Vaisakha (April)	Jyeshta (May)	Ashadha (June)	Sravana (July)	Bhadrapada (August)	Asvina (September)	Karttika (October)	Margasira (November)	Pausha (December)	A.D.	Magha (January)	Phalguna (February)	Chaitra (March)	A.D.	Vaisakha (April)	Jyeshta (May)	Ashadha (June)	Sravana (July)	Bhadrapada (August)	Asvina (September)	Karttika (October)	Margasira (November)	Pausha (December)	A.D.	Magha (January)	Phalguna (February)	Chaitra (March)
1840	12	13	13	15	15	15	16	15	14	**41**	13	11	13	**1880**	12	13	14	15	16	16	16	15	15	**81**	13	11	13
1841	12	13	14	15	16	16	16	15	14	**42**	13	11	13	**1881**	12	13	14	15	16	16	16	15	15	**82**	13	12	13
1842	12	13	14	15	16	16	16	15	15	**43**	13	11	13	**1882**	13	14	14	16	16	16	17	16	15	**83**	13	12	14
1843	13	14	14	16	16	16	17	15	15	**44**	13	12	13	**1883**	13	14	14	16	16	17	17	16	15	**84**	14	12	13
1844	12	13	13	15	15	15	16	15	14	**45**	13	11	13	**1884**	12	13	14	15	16	16	16	15	15	**85**	13	11	13
1845	12	13	14	15	16	16	16	15	15	**46**	13	11	13	**1885**	13	13	14	16	16	16	16	15	15	**86**	13	12	13
1846	12	13	14	15	16	16	16	15	15	**47**	13	12	13	**1886**	13	14	14	16	16	16	17	16	15	**87**	13	12	14
1847	13	14	14	16	16	16	17	16	15	**48**	13	12	13	**1887**	13	14	14	16	17	17	17	16	15	**88**	14	12	13
1848	12	13	13	15	15	15	16	15	14	**49**	13	11	13	**1888**	12	13	14	15	16	16	16	15	15	**89**	13	11	13
1849	12	13	14	15	16	16	16	15	15	**50**	13	11	13	**1889**	13	14	14	16	16	16	17	15	15	**90**	13	12	13
1850	12	13	14	15	16	16	16	15	15	**51**	13	12	13	**1890**	13	14	14	16	16	16	17	16	15	**91**	13	12	14
1851	13	14	14	16	16	16	17	16	15	**52**	13	12	13	**1891**	13	14	14	16	17	17	17	16	15	**92**	14	12	13
1852	12	13	13	15	15	15	16	15	14	**53**	13	11	13	**1892**	12	13	14	15	16	16	16	15	15	**93**	13	11	13
1853	12	13	14	15	16	16	16	15	15	**54**	13	11	13	**1893**	13	14	14	16	16	16	17	15	15	**94**	13	12	13
1854	13	13	14	16	16	16	16	15	15	**55**	13	12	13	**1894**	13	14	14	16	16	16	17	16	15	**95**	14	12	14
1855	13	14	14	16	16	16	17	16	15	**56**	13	12	13	**1895**	13	14	14	16	17	17	17	16	15	**96**	14	12	13
1856	12	13	13	15	16	16	16	15	14	**57**	13	11	13	**1896**	12	13	14	15	16	16	16	15	15	**97**	13	11	13
1857	12	13	14	15	16	16	16	15	15	**58**	13	11	13	**1897**	13	14	14	16	16	16	17	15	15	**98**	13	12	14
1858	13	13	14	16	16	16	16	15	15	**59**	13	12	13	**1898**	13	14	14	16	16	16	17	16	15	**99**	14	12	14
1859	13	14	14	16	16	16	17	16	15	**60**	13	12	13	**1899**	13	14	15	16	17	17	17	16	15	**1900**	14	12	14
1860	12	13	13	15	16	16	16	15	14	**61**	13	11	13	**1900**	13	14	15	16	17	17	17	16	16	**01**	14	12	14
1861	12	13	14	15	16	16	16	15	15	**62**	13	11	13	**1901**	14	15	15	17	17	17	18	17	16	**02**	14	13	15
1862	13	14	14	16	16	16	17	15	15	**63**	13	12	13	**1902**	14	15	15	17	17	17	18	17	16	**03**	15	13	15
1863	13	14	14	16	16	16	17	16	15	**64**	13	12	13	**1903**	14	15	16	17	18	18	18	17	17	**04**	15	13	14
1864	12	13	13	15	16	16	16	15	14	**65**	13	11	13	**1904**	13	14	15	16	17	17	17	16	16	**05**	14	13	14
1865	12	13	14	15	16	16	16	15	15	**66**	13	11	13	**1905**	14	15	15	17	17	17	18	17	16	**06**	14	13	15
1866	13	14	14	16	16	16	17	15	15	**67**	13	12	14	**1906**	14	15	15	17	17	17	18	17	16	**07**	15	13	15
1867	13	14	14	16	16	16	17	16	15	**68**	13	12	13	**1907**	14	15	16	17	18	18	18	17	17	**08**	15	13	14
1868	12	13	13	15	16	16	16	15	14	**69**	13	11	13	**1908**	13	14	15	16	17	17	17	16	16	**09**	14	13	14
1869	12	13	14	15	16	16	16	15	15	**70**	13	11	13	**1909**	14	15	15	17	17	17	18	17	16	**10**	14	13	15
1870	13	14	14	16	16	16	17	15	15	**71**	13	12	14	**1910**	14	15	15	17	17	17	18	17	16	**11**	15	13	15
1871	13	14	14	16	16	16	17	16	15	**72**	14	12	13	**1911**	14	15	16	17	18	18	18	17	17	**12**	15	13	14
1872	12	13	14	15	16	16	16	15	14	**73**	13	11	13	**1912**	14	14	15	17	17	17	17	16	16	**13**	14	13	14
1873	12	13	14	15	16	16	16	15	15	**74**	13	12	13	**1913**	14	15	15	17	17	17	18	17	16	**14**	14	13	15
1874	13	14	14	16	16	16	17	16	15	**75**	13	12	14	**1914**	14	15	15	17	18	18	18	17	16	**15**	15	13	15
1875	13	14	14	15	16	16	17	16	15	**76**	14	12	13	**1915**	14	15	16	17	18	18	18	17	17	**16**	15	13	14
1876	12	13	14	15	16	16	16	15	15	**77**	13	11	13	**1916**	14	14	15	17	17	17	17	16	16	**17**	14	13	14
1877	12	13	14	15	16	16	16	15	15	**78**	13	12	13	**1917**	14	15	15	17	17	17	18	17	16	**18**	14	13	15
1878	13	13	14	16	16	16	17	16	15	**79**	13	12	14	**1918**	14	15	15	17	18	18	18	17	16	**19**	15	13	15
1879	13	14	14	16	16	16	17	16	15	**80**	14	12	13	**1919**	14	15	16	17	18	18	18	17	17	**20**	15	13	14

NOTE.—It will be seen from a comparison of the above table with the General Ephemeris given below that solar months in Bengal seldom commence on the same day as in the Tamil and Malayalam countries. In the first place the Sankrantis which determine the commencement of solar months in Bengal are those fixed by the Surya Siddhanta, whereas in Southern India the solar months and their Sankrantis are reckoned according to the Arya Siddhanta.

Secondly, the rule in Bengal is that when the Sankranti occurs less than 45 ghatikas after sunrise, the civil solar month commences on the next day, and when the Sankranti occurs 45 ghatikas after Sunrise or later, the civil solar month commences two days after the date of the Sankranti. It follows from this rule that in Bengal the civil month never begins on the date of the Sankranti which in that province invariably belongs to the previous month whereas in Southern India, the civil month very often begins on the day of the Sankranti. In practice, the rule in Bengal appears to be to begin the Solar month on the third day after Sankranti when the fraction of day at which Sankranti occurs is ·70 of a day or more. The above table has been constructed on this principle.

TABLE XII.—General Ephemeris A.D. 1840—A.D. 1845.

kollam year - K - add 1

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Beginning Month	Beginning Day	Last Day	End Week-day	End Month	End Day	Lunar month.	New Moon Week-day	Month	Day (mean)	Ending moment of New Moon Tithi. Mean Ghatikas	Mean Palas	Day (actual)	Actual Ghatikas	Actual Palas	☾'s Anom. Day	☾'s Anom. Ghatikas	☾'s Anom. Palas	⊙'s Anom. Day	⊙'s Anom. Ghatikas	⊙'s Anom. Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4941	Chittirai .	7	Ap	11	31	2	My	11	Vaisakha ...	6	My	1	37	56	...	57	58	25	15	58	20	32	14	1 day, 32 ghat., 10 palas.	2 ,, 51 ,, 31 ,,
Sak. 1762	Vaikasi ...	3	My	12	31	5	Je	11	Jyeshta ...	1	My	31	9	46	...	16	22	27	14	31	50	4	4		
Vik. 1897	Ani ...	6	Je	12	32	2	Jl	13	Ashada ...	2	Je	29	41	36	...	33	14	1	39	48	79	35	54		
(S.) Sarvari	Adi ...	3	Jl	14	31	5	Au	13	Sravana ...	4	Jl	29	13	26	28○	51	20	3	38	22	109	7	44		
K. 1015 (S.M.)	Avani ...	6	Au	14	31	1	S	13	Bhadrapada .	5	Au	27	45	17	...●	13	25	5	36	56	138	39	34		
K. 1015 (N.M.)	Purattasi .	2	S	14	31	4	O	14	Asvina ..	7	S	26	17	7	25	41	40	7	35	29	168	11	24		
59 g, 35 p.	Aippasi ...	5	O	15	30	6	N	13	Kartika ...	1	O	25	48	57	...	17	28	9	34	2	197	43	15		
B. S. 1246	Kartigai .	7	N	14	29	7	D	12	Margasira ...	3	N	24	20	47	...	0	50	11	32	36	227	15	5		
(N.) Virodhakrit	Margali ...	1	D	13	30	2	Ja	11	Pausha ...	4	D	23	52	37	...	49	40	13	31	10	256	46	55		
A.D. 1841	Tai ...	3	Ja	12	29	3	F	9	Magha ...	6	Ja	22	24	27	...○	39	23	15	29	43	286	18	45		
H. 1257	Masi ...	4	F	10	30	5	Mr	11	Phalguna ...	7	F	20	56	17	21	24	55	17	28	17	315	50	35		
Feb. 22, 23	Panguni .	6	Mr	12	30	7	Ap	10	Chaitra ...	2	Mr	22	28	7	23	33	13	19	26	50	345	22	25		
K. Y. 4942	Chittirai .	1	Ap	11	31	3	My	11	Vaisakha ...	4	Ap	21	0	0	...	3	48	21	25	24	9	38	45	0 day, 43 ghat., 17 palas.	1 ,, 20 ,, 33 ,,
Sak. 1763	Vaikasi ...	4	My	12	32	7	Je	12	Jyeshta ...	5	My	20	31	49	...	58	37	23	23	58	39	10	34		
Vik. 1898	Ani ...	1	Je	13	31	3	Jl	13	Ashada ...	7	Je	19	3	39	...	16	44	25	22	31	68	42	24		
(S.) Plava	Adi ...	4	Jl	14	32	7	Au	14	Sravana ...	1	Jl	18	35	28	...○	33	33	27	21	5	98	14	14		
K. 1016 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	3	Au	17	7	18	16	51	12	1	46	22	127	46	4		
K. 1016 (N. M.)	Purattasi .	4	S	15	30	5	O	14	Asvina ...	4	S	15	39	8	...	11	43	3	44	55	157	17	54		
										6	O	15	10	58	14	37	36	5	43	29	186	49	44		
15 g, 6 p	Aippasi ...	6	O	15	30	7	N	13	Kartika ...	7	N	13	42	48	...	10	18	7	42	3	216	21	34		
B. S. 1247	Kartigai .	1	N	14	30	2	D	13	Margasira ...	2	D	13	14	38	12	50	13	9	40	36	245	53	25		
(N.) Paridhavin.	Margali ...	3	D	14	29	3	Jr	11	Pausha ...	3	Ja	11	46	29	...○	36	22	11	39	10	275	25	15		
A. D. 1842	Tai ...	4	Ja	12	29	4	F	9	Magha ...	5	F	10	18	19	...	24	54	13	37	43	304	57	5		
H. 1258	Masi ...	5	F	10	30	6	Mr	11	Phalguna ...	6	Mr	11	50	9	12	12	6	15	36	17	334	28	55		
Feb. 12	Panguni .	7	Mr	12	31	2	Ap	11	Chaitra ...	1	Ap	10	21	59	...	53	11	17	34	51	364	0	45		
K. Y. 4943	Chittirai .	3	Ap	12	30	4	My	11	Vaisakha ...	2	My	9	53	49	10	26	50	19	33	24	28	17	4	2 days, 0 ghat., 57 palas.	3 ,, 56 ,, 13 ,,
Sak. 1764	Vaikasi ...	5	My	12	32	1	Je	12	Jyeshta ...	4	Je	8	25	39	...	53	33	21	31	58	57	48	54		
Vik. 1899	Ani ...	2	Je	13	31	4	Jl	13	Ashada ...	5	Jl	7	57	29	8●○	15	5	23	30	31	87	20	44		
(S.) Subhakrit.	Adi ...	5	Jl	14	32	1	Au	14	Sravana ...	7	Au	6	29	19	...	34	0	25	29	5	116	52	34		
K. 1017 (S.M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	2	S	5	1	10	4	52	48	27	27	39	146	24	24		
K. 1017 (N.M.)	Purattasi .	5	S	15	30	6	O	14	Asvina ...	3	O	4	33	0	...	13	36	1	52	56	175	56	14		
30 g, 37 p.	Aippasi ...	7	O	15	30	1	N	13	Kartika ...	5	N	3	4	49	2	38	16	3	51	29	205	28	4		
B. S. 1248	Kartigai .	2	N	14	30	3	D	13	Margasira ...	6	D	2	36	40	...	8	13	5	50	3	234	59	55		
(N.) Parmadin	Margali ...	4	D	14	29	4	Jr	11	Pausha ...	1	Ja	1	8	30	D.31	44	7	7	48	36	264	31	45		
A. D. 1843	Tai ...	5	Ja	12	30	6	F	10	Magha ...	2	Ja	30	40	20	...	25	26	9	47	10	294	3	35		
H. 1259	Masi ...	7	F	11	29	7	Mr	11	Phalguna ...	4	Mr	1	12	10	...	10	15	11	45	44	323	35	25		
Feb. 1	Panguni .	1	Mr	12	31	3	Ap	11	Chaitra ...	5	Mr	30	44	0	...	55	32	13	44	17	353	7	15		
K. Y. 4944	Chittirai .	4	Ap	12	31	6	My	12	Vaisakha ...	7	Ap	29	15	50	...	37	46	15	42	51	17	23	34	1 day, 18 ghat., 4 palas.	2 ,, 25 ,, 15 ,,
Sak. 1765	Vaikasi ...	7	My	13	31	2	Je	12	Jyeshta ...	1	My	28	47	41	29	15	17	17	41	24	46	55	24		
Vik. 1900	Ani ...	3	Je	13	32	6	Jl	14	Ashada ...	3	Je	27	19	31	...	44	52	19	39	58	76	27	14		
(S.) Sobhakrit	Adi ...	7	Jl	15	31	2	Au	14	Sravana ...	4	Jl	26	51	21	27	10	40	21	38	32	105	59	4		
K. 1018 (S. M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada .	6	Au	25	23	11	...	33	23	23	37	5	135	30	54		
K. 1018 (N. M.)	Purattasi .	6	S	15	31	1	O	15	Asvina ...	7	S	23	55	1	...	55	14	25	35	39	165	2	44		
46 g, 9 p	Aippasi ...	2	O	16	30	3	N	14	Kartika ...	2	O	23	26	51	...	17	46	0	0	20	194	34	34		
B. S. 1249	Kartigai .	4	N	15	29	4	D	13	Margasira ...	3	N	21	58	41	...○	42	21	1	59	29	224	6	24		
(N.) Ananda	Margali ...	5	D	14	29	5	Jr	11	Pausha ...	5	D	21	30	31	...●	10	17	3	58	3	253	38	15		
A. D. 1844	Tai ...	6	Ja	12	30	7	F	10	Magha ...	7	Ja	20	2	21	19	42	13	5	56	37	283	10	5		
H. 1260	Masi ...	1	F	11	30	2	Mr	11	Phalguna ...	1	F	18	34	12	...	17	52	7	55	10	312	41	55		
Ja. 22	Panguni .	3	Mr	12	30	4	Ap	10	Chaitra ...	3	Mr	19	6	2	18	56	47	9	53	44	342	13	45		
K. Y. 4945	Chittirai .	5	Ap	11	31	7	My	11	Vaisakha ...	4	Ap	17	37	52	...	37	39	11	52	17	6	30	4	0 day, 29 ghat., 11 palas.	0 ,, 54 ,, 18 ,,
Sak. 1766	Vaikasi ...	1	My	12	31	3	Je	11	Jyeshta ...	6	My	17	9	42	...○	18	23	13	50	51	36	1	54		
Vik. 1901	Ani ...	4	Je	12	32	7	Jl	13	Ashada ...	7	Je	15	41	32	...	56	44	15	49	25	65	33	44		
(S.) Krodhi	Adi ...	1	Jl	14	31	3	Au	13	Sravana ...	2	Jl	15	13	22	...	31	19	17	47	58	95	5	34		
										3	Au	13	45	12	14	2	21	19	46	32	124	37	24		
K. 1019 (S. M.)	Avani ...	4	Au	14	31	6	S	13	Bhadrapada .	5	S	12	17	2	...	30	36	21	45	5	154	9	14		
K. 1019 (N. M.)	Purattasi .	7	S	14	31	2	O	14	Asvina ...	6	O	11	48	53	...	57	2	23	43	39	183	41	4		
1 g, 40 p.	Aippasi ...	3	O	15	30	4	N	13	Kartika ...	1	N	10	20	43	...○	22	40	25	42	13	213	12	54		
B. S. 1250	Kartigai .	5	N	14	29	5	D	12	Margasira ...	2	D	9	52	33	...	48	29	0	7	30	242	44	45		
(N.) Rakshasa	Margali ...	6	D	13	30	7	Jr	11	Pausha ...	4	Ja	8	24	23	...	15	17	2	6	3	272	16	35		
A. D. 1845	Tai ...	1	Ja	12	29	1	F	9	Magha ...	5	F	6	56	13	...	43	37	4	4	37	301	48	25		
H. 1261 Ja. 10	Masi ...	2	F	10	30	3	Mr	11	Phalguna ...	7	Mr	8	28	3	...	13	48	6	3	11	331	20	15		
H. 1262 Dec. 30	Panguni .	4	Mr	12	30	5	Ap	10	Chaitra ...	2	Ap	7	0	0	6	46	15	8	1	44	360	52	5		

TABLE XII.—General Ephemeris A.D. 1845—A.D. 1850.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Ending moment of New Moon Tithi Mean Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	⊙'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4946	Chittirai ...	6	Ap	11	31	1	My	11	Vaisakha ...	3	My	6	31	43	...●○	21	4	10	0	18	25	8	24	1 day, 52 ghat., 50 palas.	3 „ 29 „ 57 „
Sak. 1767	Vaikasi ...	2	My	12	32	5	Je	12	Jyeshta ...	5	Je	5	3	33	4	57	41	11	58	51	54	40	14		
Vik. 1902	Ani ...	6	Je	13	31	1	Jl	13	Ashada ...	6	Jl	4	35	24	...	35	46	13	57	25	84	12	4		
(S.) Visvavasu	Adi ...	2	Jl	14	32	5	Au	14	Sravana ...	1	Au	3	7	14	...	13	37	15	55	59	113	43	54		
K. 1020 (S. M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	2	S	1	39	4	...	49	14	17	54	32	143	15	44		
K. 1020 (N. M.)	Purattasi .	2	S	15	30	3	O	14	Asvina ...	4	O	1	10	54	...	24	49	19	53	6	172	47	34		
17 g, 11 p.	Aippasi ...	4	O	15	30	5	N	13	Kartika ...	5	O	30	42	44	...○	57	1	21	51	39	202	19	24		
B. S. 1251	Kartigai ...	6	N	14	30	7	D	13	Margasira ...	7	N	29	14	34	...	26	58	23	50	13	231	51	14		
(N.) Anala	Margali ...	1	D	14	29	1	Ja	11	Pausha ...	1	D	28	46	24	...	55	1	25	48	47	261	23	5		
A. D. 1846	Tai ...	2	Ja	12	29	2	F	9	Magha ...	3	Ja	27	18	14	...	21	33	0	14	4	290	54	55		
H. 1263	Masi ...	3	F	10	30	4	Mr	11	Phalguna ...	4	F	25	50	5	...	48	1	2	12	37	320	26	45		
Dec. 20	Panguni ...	5	Mr	12	31	7	Ap	11	Chaitra ...	6	Mr	27	21	55	...	12	43	4	11	11	349	58	35		
K. Y. 4947	Chittirai ...	1	Ap	12	30	2	My	11	Vaisakha ...	7	Ap	25	53	45	...	39	14	6	9	44	14	14	54	1 day, 3 ghat., 57 palas.	1 „ 59 „ 0 „
Sak. 1768	Vaikasi ...	3	My	12	32	6	Je	12	Jyeshta ...	2	My	25	25	35	...	7	46	8	8	18	43	46	44		
Vik. 1903	Ani ...	7	Je	13	31	2	Jl	13	Ashada ...	3	Je	23	57	25	...	39	19	10	6	52	73	18	34		
(S.) Parabhava.	Adi ...	3	Jl	14	32	6	Au	14	Sravana ...	5	Jl	23	29	15	...	14	36	12	5	25	102	50	24		
K. 1021 (S. M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	7	Au	22	1	6	21	53	39	14	3	59	132	22	14		
K. 1021 (N. M.)	Purattasi .	3	S	15	30	4	O	14	Asvina ...	1	S	20	32	56	...	34	48	16	2	32	161	54	4		
32 g, 42 p.	Aippasi ...	5	O	15	30	6	N	13	Kartika ...	3	O	20	4	46	...●	15	36	18	1	6	191	25	54		
B. S. 1252	Kartigai ...	7	N	14	30	1	D	13	Margasira ...	4	N	18	36	36	...	54	17	19	59	40	220	57	44		
(N.) Pingala	Margali ...	2	D	14	29	2	Ja	11	Pausha ...	6	D	18	8	26	...	29	14	21	58	13	250	29	34		
A. D. 1847	Tai ...	3	Ja	12	30	4	F	10	Magha ...	7	Ja	16	40	16	17	0	22	23	56	47	280	1	25		
H. 1264	Masi ...	5	F	11	29	5	Mr	11	Phalguna ...	2	F	15	12	6	...	27	37	25	55	20	309	33	15		
Dec. 9	Panguni ...	6	Mr	12	31	1	Ap	11	Chaitra ...	3	Mr	16	43	56	...○	51	35	0	20	37	339	5	5		
K. Y. 4948	Chittirai ...	2	Ap	12	31	4	My	12	Vaisakha ...	5	Ap	15	15	46	...●	13	41	2	19	11	3	21	24	0 day, 15 ghat., 4 palas.	0 „ 28 „ 2 „
Sak. 1769	Vaikasi ...	5	My	13	31	7	Je	12	Jyeshta ...	6	My	14	47	36	...	35	27	4	17	31	32	53	14		
										1	Je	13	19	26	12	58	30	6	16	8	62	25	4		
Vik. 1904	Ani ...	1	Je	13	32	4	Jl	14	Ashada ...	2	Jl	12	51	17	...	24	54	8	14	52	91	56	54		
(S.) Plavanga	Adi ...	5	Jl	15	31	7	Au	14	Sravana ...	4	Au	11	23	7	10	56	33	10	13	25	121	28	44		
K. 1022 (S.M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	5	S	9	54	57	...○	34	23	12	11	59	151	0	34		
K. 1022 (N.M.)	Purattasi...	4	S	15	31	6	O	15	Asvina ...	7	O	9	26	47	...●	17	35	14	10	33	180	32	24		
48 g, 14 p.	Aippasi ...	7	O	16	30	1	N	14	Kartika ...	1	N	7	58	37	8	3	14	16	9	6	210	4	14		
B. S. 1253	Kartigai ...	2	N	15	29	2	D	13	Margasira ...	3	D	7	30	27	...	47	46	18	7	40	239	36	4		
(N.) Kalayukta.	Margali ...	3	D	14	29	3	Ja	11	Pausha ...	5	Ja	6	2	18	...	28	12	20	6	13	269	7	54		
A. D. 1848	Tai ...	4	Ja	12	30	5	F	10	Magha ...	6	F	4	34	8	5	1	5	22	4	47	298	39	45		
H. 1265	Masi ...	6	F	11	30	7	Mr	11	Phalguna ...	1	Mr	5	5	58	...○	29	44	24	3	19	328	11	35		
Nov. 27	Panguni ...	1	Mr	12	30	2	Ap	10	Chaitra ...	2	Ap	3	37	48	...	55	27	26	1	54	357	43	25		
K. Y. 4949	Chittirai ...	3	Ap	11	31	5	My	11	Vaisakha ...	4	My	3	9	38	...	15	32	0	27	11	21	59	45	1 day, 38 ghat., 43 palas.	3 „ 3 „ 41 „
Sak. 1770	Vaikasi ...	6	My	12	31	1	Je	11	Jyeshta ...	5	Je	1	41	28	...	34	4	2	25	45	51	31	34		
Vik. 1905	Ani ...	2	Je	12	32	5	Jl	13	Ashada ...	7	Jl	1	13	18	Je. 30	53	32	4	24	18	81	3	24		
(S.) Kilaka	Adi ...	6	Jl	14	31	1	Au	13	Sravana ...	1	Jl	30	45	8	...	15	34	6	22	52	110	35	14		
K. 1023 (S.M.)	Avani ...	2	Au	14	31	4	S	13	Bhadrapada .	3	Au	29	16	58	28○	43	31	8	21	26	140	7	4		
K. 1023 (N.M.)	Purattasi .	5	S	14	31	7	O	14	Asvina ...	4	S	27	48	48	...●	18	43	10	19	59	169	38	54		
3 g, 45 p.	Aippasi ...	1	O	15	30	2	N	13	Kartika ...	6	O	27	20	38	...	1	13	12	18	33	199	10	44		
B. S. 1254	Kartigai ...	3	N	14	29	3	D	12	Margasira ...	7	N	25	52	29	...	48	59	14	17	6	228	42	35		
(N) Siddharthin.	Margali ...	4	D	13	30	5	Ja	11	Pausha ...	2	D	25	24	19	...	37	43	16	15	40	258	14	25		
A. D. 1849	Tai ...	6	Ja	12	29	6	F	9	Magha ...	3	Ja	23	56	9	24	22	53	18	14	14	287	46	15		
H. 1266	Masi ...	7	F	10	30	1	Mr	11	Phalguna ...	5	F	22	27	59	23●○	1	26	20	12	47	317	18	5		
Nov. 17	Panguni ...	2	Mr	12	30	3	Ap	10	Chaitra ...	7	Mr	24	0	0	...	32	36	22	11	21	346	49	55		
K. Y. 4950	Chittirai ...	4	Ap	11	31	6	My	11	Vaisakha ...	1	Ap	22	31	39	...	56	16	24	9	54	11	6	14	0 day, 49 ghat., 50 palas.	1 „ 32 „ 44 „
Sak. 1771	Vaikasi ...	7	My	12	32	3	Je	12	Jyeshta ...	3	My	22	3	30	...	17	5	26	8	28	40	38	4		
Vik. 1906	Ani ...	4	Je	13	31	6	Jl	13	Ashada ...	4	Je	20	35	19	...	34	8	0	33	45	70	9	54		
(S.) Saumya.	Adi ...	7	Jl	14	32	3	Au	14	Sravana ...	6	Jl	20	7	10	19	51	0	2	32	19	99	41	44		
K. 1024 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	7	Au	18	39	0	...●○	10	15	4	30	52	129	13	34		
K. 1024 (N. M.)	Purattasi .	7	S	15	30	1	O	14	Asvina ...	2	S	17	10	50	16	36	9	6	29	26	158	45	24		
19 g, 16 p.	Aippasi ...	2	O	15	30	3	N	13	Kartika ...	3	O	16	42	40	...	8	14	8	27	59	188	17	14		
B. S. 1255	Kartigai ...	4	N	14	30	5	D	13	Margasira ...	5	N	15	14	30	14	48	9	10	26	33	217	49	4		
(N.) Raudra.	Margali ...	6	D	14	29	6	Ja	11	Pausha ...	6	D	14	46	20	...	34	49	12	25	7	247	20	54		
A. D. 1850	Tai ...	7	Ja	12	29	7	F	9	Magha ...	1	Ja	13	18	10	...	24	45	14	23	40	276	52	44		
H. 1267	Masi ...	1	F	10	30	2	Mr	11	Phalguna ...	2	F	11	50	0	12●	12	50	16	22	14	306	24	35		
Nov. 6	Panguni ...	3	Mr	12	31	5	Ap	11	Chaitra ...	4	Mr	13	21	50	...	54	47	18	20	47	335	56	25		

Kollam years K – add 1

TABLE XII.—General Ephemeris A.D. 1850—A.D. 1855.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar month.	New Moon Ending moment of New Moon Tithi. Mean Week-day	Month	Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4951	Chittirai ...	6	Ap	12	31	1	My	12	Vaisakha ...	5	Ap	11	53	41	12	28	57	20	19	17	0	12	43	0 day, 0 ghat., 57 palas.	0 „ 1 „ 46 „
										7	My	11	25	31	...	55	46	22	17	51	29	44	33		
Sak. 1772	Vaikasi ...	2	My	13	31	4	Je	12	Jyeshta ...	1	Je	9	57	21	10	16	54	24	16	24	59	16	24		
Vik. 1907	Ani ...	5	Je	13	32	1	Jl	14	Ashada ...	3	Jl	9	29	11	...	34	31	26	14	58	88	48	14		
(S.) Sadharana.	Adi ...	2	Jl	15	31	4	Au	14	Sravana ...	5	Au	8	1	1	7	51	31	0	40	15	118	20	4		
K. 1025 (S. M.)	Avani ...	5	Au	15	31	7	S	14	Bhadrapada .	6	S	6	32	51	...	10	39	2	38	49	147	51	54		
K. 1025 (N. M.)	Purattasi .	1	S	15	30	2	O	14	Asvina ...	1	O	6	4	41	5	33	56	4	37	22	177	23	44		
34 g., 47 p.	Aippasi ...	3	O	15	30	4	N	13	Kartika ...	2	N	4	36	31	...	3	16	6	35	56	206	55	34		
B. S. 1256	Kartigai ...	5	N	14	30	6	D	13	Margasira ...	4	D	4	8	22	3	39	41	8	34	29	236	27	24		
N. Durmati	Margali ...	7	D	14	29	7	Ja	11	Pausha ...	5	Ja	2	40	12	...○	22	55	10	33	3	265	59	14		
A. D. 1851	Tai ...	1	Ja	12	30	2	F	10	Magha ...	7	F	1	12	2	...	10	38	12	31	37	295	31	4		
H. 1268	Masi ...	3	F	11	29	3	Mr	11	Phalguna ...	1	Mr	2	43	52	...	56	35	14	30	10	325	2	54		
Oct. 26, 27	Panguni ...	4	Mr	12	31	6	Ap	11	Chaitra ...	3	Ap	1	15	42	...	42	34	16	28	43	354	34	44		
K. Y. 4952	Chittirai ...	7	Ap	12	31	2	My	12	Vaisakha ...	4	Ap	30	47	32	My.1.	19	56	18	27	17	18	51	4	1 day, 24 ghat., 36 palas.	2 „ 37 „ 26 „
Sak. 1773	Vaikasi ...	3	My	13	31	5	Je	12	Jyeshta ...	6	My	30	19	22	...	49	8	20	25	51	48	22	54		
Vik. 1908	Ani ...	6	Je	13	32	2	Jl	14	Ashada ...	7	Je	28	51	12	29○	14	44	22	24	25	77	54	44		
(S.) Virodhakrit.	Adi ...	3	Jl	15	31	5	Au	14	Sravana ...	2	Jl	28	23	2	...	33	57	24	22	58	107	26	34		
K. 1026 (S. M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	3	Au	26	54	53	...	52	58	26	21	32	136	58	24		
K. 1026 (N. M.)	Purattasi ·	2	S	15	31	4	O	15	Asvina ...	5	S	25	26	43	...	12	53	0	46	49	166	30	14		
50 g., 19 p.	Aippasi ...	5	O	16	30	6	N	14	Kartika ...	6	O	24	58	33	...	35	50	2	45	22	196	2	4		
B. S. 1257	Kartigai ...	7	N	15	29	7	D	13	Margasira ...	1	N	23	30	23	...	3	12	4	43	56	225	33	54		
(N) Dundubhi	Margali ...	1	D	14	29	1	Ja	11	Pausha ...	3	D	23	2	13	22○	36	7	6	42	30	255	5	44		
A. D. 1852	Tai ...	2	Ja	12	30	3	F	10	Magha ...	4	Ja	21	34	3	...	14	34	8	41	3	284	37	33		
H. 1269	Masi ...	4	F	11	30	5	Mr	11	Phalguna ...	6	F	20	5	53	19	57	23	10	39	37	314	9	23		
Oct. 15	Panguni ...	6	Mr	12	30	7	Ap	10	Chaitra ...	7	Mr	20	37	43	...	42	16	12	38	10	343	41	13		
K. Y. 4953	Chittirai ...	1	Ap	11	31	3	My	11	Vaisakha ...	2	Ap	19	9	34	...	25	56	14	36	44	7	57	33	0 day, 35 ghat., 43 palas.	1 „ 6 „ 28 „
Sak. 1774	Vaikasi ...	4	My	12	31	6	Je	14	Jyeshta ...	3	My	18	41	24	19	5	49	16	35	18	37	29	23		
Vik. 1909	Ani ...	7	Je	12	32	3	Jl	13	Ashada ...	5	Je	17	13	14	...○	38	45	18	33	51	67	1	13		
(S.) Paridhavi.	Adi ...	4	Jl	14	31	6	Au	13	Sravana ...	6	Jl	16	45	4	17	6	52	20	32	25	96	33	4		
K. 1027 (S. M.)	Avani ...	7	Au	14	32	3	S	14	Bhadrapada .	1	Au	15	16	54	...	31	27	22	30	58	126	4	54		
										2	S	13	48	44	...	54	7	24	29	32	155	36	44		
K. 1027 (N. M.)	Purattasi .	4	S	15	30	5	O	14	Asvina ...	4	O	13	20	34	...	16	40	26	28	6	185	8	34		
5 g., 50 p.	Aippasi ...	6	O	15	30	7	N	13	Kartika ...	5	N	11	52	24	...	40	28	0	53	23	214	40	24		
B. S. 1258	Kartigai .	1	N	14	29	1	D	12	Margasira ...	7	D	11	24	14	...●○	6	50	2	51	59	244	12	14		
(N) Rudhirodgarin.	Margali ...	2	D	13	30	3	Ja	11	Pausha ...	1	Ja	9	56	5	...	36	44	4	50	30	273	44	4		
A. D. 1853	Tai ...	4	Ja	12	29	4	F	9	Magha ...	3	F	8	27	55	...	10	3	6	49	3	303	15	54		
H. 1270	Masi ...	5	F	10	30	6	Mr	11	Phalguna ...	5	Mr	10	0	0	9	46	45	8	47	37	332	47	45		
Oct. 4	Panguni ...	7	Mr	12	30	1	Ap	10	Chaitra ...	6	Ap	8	31	35	...	26	5	10	46	11	36[illegible]	19	35		
K. Y. 4954	Chittirai .	2	Ap	11	31	4	My	11	Vaisakha ...	1	My	8	3	25	...	6	32	12	44	44	26	35	55	1 day, 59 ghat., 23 palas.	3 „ 42 „ 8 „
Sak. 1775	Vaikasi ...	5	My	12	32	1	Je	12	Jyeshta ...	2	Je	6	35	15	...○	45	58	14	43	18	56	7	45		
Vik. 1910	Ani ...	2	Je	13	31	4	Jl	13	Ashada ...	4	Jl	6	7	5	...	22	33	16	41	51	85	39	35.		
(S.) Pramadi	Adi ...	5	Jl	14	32	1	Au	14	Sravana ...	5	Au	4	38	55	...	55	47	18	40	25	115	11	24		
K. 1028 (S. M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	7	S	3	10	46	...	25	57	20	38	59	144	43	14		
K. 1028 (N. M.)	Purattasi .	5	S	15	30	6	O	14	Asvina ...	1	O	2	42	36	...	53	54	22	37	32	174	15	4		
21 g., 21 p.	Aippasi ...	7	O	15	30	1	N	13	Kartika ...	3	N	1	14	26	...	20	26	24	36	6	203	46	54		
B. S. 1259	Kartigai ...	2	N	14	30	3	D	13	Margasira ...	4	N	30	46	6	...	46	20	26	34	39	233	18	44		
(N.) Raktaksha.	Margali ...	4	D	14	29	4	Ja	11	Pausha ...	6	D	30	18	6	...	12	52	0	59	56	262	50	34		
A. D. 1854	Tai ...	5	Ja	12	29	5	F	9	Magha ...	7	Ja	28	49	56	...	40	55	2	58	30	292	22	24		
H. 1271.	Masi ...	6	F	10	30	7	Mr	11	Phalguna ...	2	F	27	21	46	...	9	42	4	57	4	321	54	14		
Sep. 24	Panguni ...	1	Mr	12	31	3	Ap	11	Chaitra ...	3	Mr	28	53	36	...	39	38	6	55	37	351	26	4		
K. Y. 4955	Chittirai ...	4	Ap	12	31	6	My	12	Vaisakha ...	5	Ap	27	25	26	...○	12	20	8	54	11	15	42	23	1 day, 10 ghat., 29 palas.	2 „ 11 „ 10 „
Sak. 1776	Vaikasi ...	7	My	13	31	2	Je	12	Jyeshta ...	6	My	26	57	16	...	47	31	10	52	44	45	14	13		
Vik. 1911	Ani ...	3	Je	13	32	6	Jl	14	Ashada ...	1	Je	25	29	6	...	24	34	12	51	18	74	46	3		
(S.) Ananda	Adi ...	7	Jl	15	31	2	Au	14	Sravana ...	3	Jl	25	0	57	...	2	42	14	49	52	104	17	53		
K. 1029 (S. M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada .	4	Au	23	32	47	...	40	36	16	48	25	133	49	44		
K. 1029 (N. M.)	Purattasi .	6	S	15	31	1	O	15	Asvina ...	6	S	22	4	37	...	17	4	18	46	59	163	21	34		
36 g., 52 p.	Aippasi ...	2	O	16	29	2	N	13	Kartika ...	7	O	21	36	27	...○	52	8	20	45	32	192	53	24		
B. S. 1260	Kartigai .	3	N	14	30	4	D	13	Margasira ...	2	N	20	8	17	...	23	58	22	44	6	222	25	14		
(N.) Krodhana.	Margali ...	5	D	14	29	5	Ja	11	Pausha ...	3	D	19	40	7	...	52	13	24	42	40	251	57	4		
A. D. 1855	Tai ...	6	Ja	12	30	7	F	10	Magha ...	5	Ja	18	11	58	...	19	35	26	41	13	281	28	54		
H. 1272	Masi ...	1	F	11	30	2	Mr	12	Phalguna ...	6	F	16	43	48	...	45	15	1	6	30	311	0	44		
Sep. 13	Panguni ...	3	Mr	13	30	4	Ap	11	Chaitra ...	1	Mr	18	15	38	...	10	15	3	5	4	340	32	34		

TABLE XII.—General Ephemeris A.D. 1855—A.D. 1860.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Beginning Month	Beginning Day	Last Day	End Week-day	End Month	End Day	Lunar month.	New Moon Week-day	Month	Day (mean)	Ending moment of New Moon Tithi, Mean Ghatikas	Mean Palas	Actual Day (actual)	Actual Ghatikas	Actual Palas	☾'s Anom. Day	☾'s Anom. Ghatikas	☾'s Anom. Palas	⊙'s Anom. Day	⊙'s Anom. Ghatikas	⊙'s Anom. Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4956	Chittirai...	5	Ap	12	31	7	My	12	Vaisakha ...	2	Ap	16	47	28	...	○ 35	30	5	3	38	4	48	53	0 day, 21 ghat., 36 palas.	0 „ 40 „ 12 „
Sak. 1777	Vaikasi ...	1	My	13	31	3	Je	12	Jyeshta ...	4	My	16	19	18	...	● 2	12	7	2	11	34	20	43		
Vik. 1912	Ani ...	4	Je	13	32	7	Jl	14	Ashada ...	5	Je	14	51	8	...	31	29	9	0	45	63	52	33		
										7	Jl	14	22	58	...	4	30	10	59	18	93	24	23		
(S.) Rakshasa	Adi ...	1	Jl	15	31	3	Au	14	Sravana ...	1	Au	12	54	48	...	41	49	12	57	52	122	56	13		
K. 1030 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	3	S	11	26	38	...	22	38	14	56	25	152	28	3		
K. 1030 (N. M.)	Purattasi .	7	S	15	31	2	O	15	Asvina ...	4	O	10	58	28	11	○ 4	38	16	54	59	181	59	54		
52 g., 24 p.	Aippasi ...	3	O	16	30	4	N	14	Kartika ...	6	N	9	30	18	...	45	13	18	53	33	211	31	44		
B. S. 1261	Kartigai...	5	N	15	29	5	D	13	Margasira ...	1	D	9	2	10	...	22	47	20	52	7	241	3	34		
(N.) Kshaya	Margali ...	6	D	14	30	7	Ja	12	Pausha ...	2	Ja	7	33	59	...	56	13	22	50	40	270	35	24		
A. D. 1856	Tai ...	1	Ja	13	29	1	F	10	Magha ...	4	F	6	5	49	...	25	21	24	49	14	300	7	14		
H. 1273	Masi ...	2	F	11	30	3	Mr	11	Phalguna ...	5	Mr	6	37	39	...	50	33	26	47	47	329	39	4		
Sep. 1	Panguni ...	4	Mr	12	30	5	Ap	10	Chaitra ...	7	Ap	5	9	29	...	●○ 13	47	1	13	4	359	10	54		
K. Y. 4957	Chittirai...	6	Ap	11	31	1	My	11	Vaisakha ...	1	My	4	41	19	...	34	7	3	11	38	23	27	13	1 day, 45 ghat., 16 palas.	3 „ 15 „ 52 „
Sak. 1778	Vaikasi ...	2	My	12	31	4	Je	11	Jyeshta ...	3	Je	3	13	9	2	55	45	5	10	11	52	59	3		
Vik. 1913	Ani ...	5	Je	12	32	1	Jl	13	Ashada ...	4	Jl	2	44	59	...	19	49	7	8	45	82	30	53		
(S.) Anala	Adi ...	2	Jl	14	32	5	Au	14	Sravana ...	6	Au	1	16	50	Jl. 31.	48	26	9	7	19	112	2	43		
K. 1031 (S. M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	7	Au	30	48	40	...	23	15	11	5	52	141	34	33		
K. 1031 (N. M.)	Purattasi...	2	S	15	30	3	O	14	Asvina ...	2	S	29	20	30	...	●○ 4	19	13	4	26	171	6	23		
7 g., 55 p.	Aippasi ...	4	O	15	30	5	N	13	Kartika ...	3	O	28	52	20	...	49	46	15	2	59	200	38	13		
B. S. 1262	Kartigai ...	6	N	14	29	6	D	12	Margasira ...	5	N	27	24	10	...	35	51	17	1	33	230	10	3		
(N.) Prabhava	Margali ...	7	D	13	30	1	Ja	11	Pausha ...	6	D	26	56	0	27	19	6	19	0	6	259	41	54		
A. D. 1857	Tai ...	2	Ja	12	29	2	F	9	Magha ...	1	Ja	25	27	50	...	56	59	20	58	40	289	13	44		
H. 1274	Masi ...	3	F	10	30	4	Mr	11	Phalguna ...	2	F	23	59	40	24	28	35	22	57	14	318	45	34		
Aug. 22	Panguni ...	5	Mr	12	30	6	Ap	10	Chaitra ...	4	Mr	25	31	30	...	54	25	24	55	47	348	17	24		
K. Y. 4958	Chittirai...	7	Ap	11	31	2	My	11	Vaisakha ...	6	Ap	24	3	22	...	15	47	26	54	21	12	33	43	0 day, 56 ghat., 23 palas.	1 „ 44 , 54 „
Sak. 1779	Vaikasi ...	3	My	12	32	6	Je	12	Jyeshta ...	7	My	23	35	11	...	34	23	1	19	38	42	5	33		
Vik. 1914	Ani ...	7	Je	13	31	2	Jl	13	Ashada ...	2	Je	22	7	1	21	52	36	3	18	12	71	37	23		
(S.) Pingala	Adi ...	3	Jl	14	32	6	Au	14	Sravana ...	3	Jl	21	38	51	...	12	19	5	16	45	101	9	13		
K. 1032. (S. M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	5	Au	20	10	41	19	37	43	7	15	19	130	41	3		
K. 1032 (N. M.)	Purattasi...	3	S	15	30	4	O	14	Asvina ...	6	S	18	42	31	...	● 9	16	9	13	52	160	12	53		
23 g., 26 p.	Aippasi ...	5	O	15	30	6	N	13	Kartika ...	1	O	18	14	21	17	48	29	11	12	26	189	44	43		
B. S. 1263	Kartigai ...	7	N	14	30	1	D	13	Margasira ...	2	N	16	46	11	...	34	21	13	11	0	219	16	33		
(N.) Sukla	Margali ...	2	D	14	29	2	Ja	11	Pausha ...	4	D	16	18	2	...	23	33	15	9	33	248	48	23		
A. D. 1858	Tai ...	3	Ja	12	30	4	F	10	Magha ...	5	Ja	14	49	52	15	11	13	17	8	7	278	20	14		
H. 1275	Masi ...	5	F	11	29	5	Mr	11	Phalguna ...	7	F	13	21	42	...	○ 53	19	19	6	40	307	52	4		
Aug. 11	Panguni ...	6	Mr	12	31	1	Ap	11	Chaitra ...	1	Mr	14	53	32	15	● 28	1	21	5	14	337	23	54		
K. Y. 4959	Chittirai ...	2	Ap	12	31	4	My	12	Vaisakha ...	3	Ap	13	25	22	...	55	32	23	3	48	1	40	13	0 day, 7 ghat., 30 palas.	0 „ 13 „ 57 „
Sak. 1780	Vaikasi ...	5	My	13	31	7	Je	12	Jyeshta ...	4	My	12	57	12	13	17	15	25	2	21	31	12	3		
										6	Je	11	29	2	...	35	26	27	0	55	60	43	53		
Vik. 1915	Ani ...	1	Je	13	32	4	Jl	14	Ashada ...	1	Jl	11	0	52	10	51	47	1	26	12	90	15	43		
(S.) Kalayukta.	Adi ...	5	Jl	15	31	7	Au	14	Sravana ...	2	Au	9	32	42	...	○ 9	59	3	24	45	119	47	33		
K. 1033 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	4	S	8	4	33	7	32	22	5	23	19	149	19	23		
K. 1033 (N. M.)	Purattasi...	4	S	15	31	6	O	15	Asvina ...	5	O	7	36	23	...	0	58	7	21	53	178	51	13		
38 g., 57 p.	Aippasi ...	7	O	16	29	7	N	13	Kartika ...	7	N	6	8	13	5	37	6	9	20	26	208	23	3		
B. S. 1264	Kartigai ...	1	N	14	30	2	D	13	Margasira ...	1	D	5	40	3	...	20	48	11	19	0	237	54	53		
(N.) Pramoda	Margali ...	3	D	14	29	3	Ja	11	Pausha ...	3	Ja	4	11	53	...	9	43	13	17	33	267	26	43		
A. D. 1859	Tai ...	4	Ja	12	30	5	F	10	Magha ...	4	F	2	43	43	...	○ 59	18	15	16	7	296	58	33		
H. 1276	Masi ...	6	F	11	30	7	Mr	12	Phalguna ...	6	Mr	4	15	33	...	44	29	17	14	41	326	30	24		
July 31	Panguni ...	1	Mr	13	30	2	Ap	11	Chaitra ...	7	Ap	2	47	23	3	22	23	19	13	14	356	2	14		
K. Y. 4960	Chittirai...	3	Ap	12	31	5	My	12	Vaisakha ...	2	My	2	19	14	...	52	36	21	11	48	20	18	33	1 day, 31 ghat., 9 palas.	2 „ 49 „ 51 „
Sak. 1781	Vaikasi ...	6	My	13	31	1	Je	12	Jyeshta ...	3	My	31	51	4	Je.1	16	3	23	10	21	49	50	23		
Vik. 1916	Ani ...	2	Je	13	32	5	Jl	14	Ashada ...	5	Je	30	22	54	...	35	11	25	8	55	79	22	13		
(S.) Siddharthi.	Adi ...	6	Jl	15	31	1	Au	14	Sravana ...	6	Jl	29	54	44	...	○ 52	21	27	7	29	108	54	3		
K. 1034 (S. M)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	1	Au	28	26	34	...	10	17	1	32	46	138	25	53		
K. 1034 (N. M.)	Purattasi...	5	S	15	31	7	O	15	Asvina ...	2	S	26	58	24	...	31	36	3	31	19	167	57	43		
54 g., 29 p.	Aippasi ...	1	O	16	30	2	N	14	Kartika ...	4	O	26	30	14	25	58	0	5	29	52	197	29	33		
B. S. 1265.	Kartigai ...	3	N	15	29	3	D	13	Margasira ...	6	N	25	2	4	24	30	58	7	28	26	227	1	23		
(N.) Prajapati.	Margali ...	4	D	14	30	4	Ja	12	Pausha ...	7	D	24	33	54	...	10	52	9	27	0	256	33	13		
A. D. 1860	Tai ...	6	Ja	13	29	6	F	10	Magha ...	2	Ja	23	5	45	22	○ 57	7	11	25	34	286	5	3		
H. 1277.	Masi ...	7	F	11	30	1	Mr	11	Phalguna ...	3	F	21	37	35	...	44	32	13	24	7	315	36	54		
July 20	Panguni ...	2	Mr	12	30	3	Ap	10	Chaitra ...	5	Mr	22	9	25	...	30	40	15	22	41	345	8	44		

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TABLE XII.—General Ephemeris A.D. 1860—A.D. 1865.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	Tamil Month End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Day (mean)	Ending moment of New Moon Tithi, Mean: Ghatikas	Palas	Actual: Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4961	Chittirai .	4	Ap	11	31	6	My	11	Vaisakha ...	6	Ap	20	41	15	21	11	11	17	21	5	9	25	3	0 day, 42 ghat., 16 palas.	1 „ 18 „ 39 „
Sak. 1782	Vaikasi ...	7	My	12	31	2	Je	11	Jyeshta ...	1	My	20	13	5	...	44	34	19	19	40	38	56	53		
Vik. 1917	Ani ...	3	Je	12	32	6	Jl	13	Ashada ...	2	Je	18	44	55	19	11	17	21	18	14	68	28	43		
(S.) Raudra	Adi ...	7	Jl	14	32	3	Au	14	Sravana ...	4	Jl	18	16	45	...○	33	16	23	16	48	98	0	38		
K. 1035 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	5	Au	16	48	35	...	52	58	25	15	22	127	32	23		
K. 1035 (N. M.)	Purattasi .	7	S	15	30	1	O	14	Asvina ...	7	S	15	20	25	...	12	39	27	13	55	157	4	13		
										1	O	14	52	16	...	34	16	1	39	12	186	36	3		
10 g., 0 p.	Aippasi ...	2	O	15	30	3	N	13	Kartika ...	3	N	13	24	6	12	59	33	3	37	46	216	7	53		
B. S. 1266	Kartigai ...	4	N	14	29	4	D	12	Margasira ...	4	D	12	55	56	...	29	41	5	36	19	245	39	43		
(N.) Angiras	Margali ...	5	D	13	30	6	Ja	11	Pausha ...	6	Ja	11	27	46	...●	5	17	7	34	53	275	11	33		
A. D. 1861	Tai ...	7	Ja	12	29	7	F	9	Magha ...	7	F	9	59	36	...	45	37	9	33	27	304	43	24		
H. 1278	Masi ...	1	F	10	30	2	Mr	11	Phalguna ...	2	Mr	11	31	26	...	29	10	11	32	0	334	15	14		
July 9	Panguni ...	3	Mr	12	30	4	Ap	10	Chaitra ...	4	Ap	10	3	16	...	13	18	13	30	36	363	47	4		
K. Y. 4962	Chittirai...	5	Ap	11	31	7	My	11	Vaisakha ...	5	My	9	35	6	...	54	39	15	29	7	28	8	23	2 days, 5 ghat., 55 palas.	3 „ 54 „ 19 „
Sak. 1783	Vaikasi ...	1	My	12	32	4	Je	12	Jyeshta ...	7	Je	8	6	57	...	31	1	17	27	41	57	35	13		
Vik. 1918	Ani ...	5	Je	13	31	7	Jl	13	Ashada ...	1	Jl	7	38	47	S●	1	54	19	26	15	87	7	3		
(S.) Durmati	Adi ...	1	Jl	14	32	4	Au	14	Sravana ...	3	Au	6	10	37	...	28	29	21	24	48	116	38	53		
K. 1036 (S. M.)	Avani ...	5	Au	15	31	7	S	14	Bhadrapada .	4	S	4	42	27	...	52	29	23	23	22	146	10	43		
K. 1036 (N. M.)	Purattasi .	1	S	15	30	2	O	14	Asvina ...	6	O	4	14	17	...	15	30	25	21	55	175	42	33		
25 g., 31 p.	Aippasi ...	3	O	15	30	4	N	13	Kartika ...	7	N	2	46	7	...	39	0	27	20	29	205	14	23		
B. S. 1267	Kartigai ...	5	N	14	30	6	D	13	Margasira ...	2	D	2	17	57	...○	4	16	1	45	46	234	46	13		
(N.) Srimukha	Margali ...	7	D	14	30	7	Ja	11	Pausha ...	3	D	31	49	47	...	32	19	3	44	20	264	18	3		
A. D. 1862	Tai ...	1	Ja	12	30	2	F	10	Magha ...	5	Ja	30	21	38	...	3	35	5	42	53	293	49	53		
H. 1279	Masi ...	3	F	11	29	3	Mr	11	Phalguna ...	6	F	28	53	28	...	38	5	7	41	27	323	21	44		
June 28, 29	Panguni ...	4	Mr	12	31	6	Ap	11	Chaitra ...	1	Mr	30	25	18	...	15	29	9	40	0	352	53	34		
K. Y. 4963	Chittirai .	7	Ap	12	31	2	My	12	Vaisakha ...	2	Ap	28	57	8	...	54	51	11	38	34	17	9	53	1 day, 17 ghat., 2 palas.	2 „ 23 „ 21 „
Sak. 1784	Vaikasi ...	3	My	13	31	5	Je	12	Jyeshta ...	4	My	28	28	58	...○	34	33	13	37	8	46	41	43		
Vik. 1919	Ani ...	6	Je	13	32	2	Jl	14	Ashada ...	6	Je	27	0	48	...	12	37	15	35	41	76	13	33		
(S.) Dundubhi	Adi ...	3	Jl	15	31	5	Au	14	Sravana ...	7	Jl	26	32	38	...	47	57	17	34	15	105	45	23		
K. 1037 (S. M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	2	Au	25	4	29	...	20	7	19	32	48	135	17	13		
K. 1037 (N. M.)	Purattasi .	2	S	15	31	4	O	15	Asvina ...	3	S	23	36	19	...	49	49	21	31	22	164	49	3		
41 g., 2 p.	Aippasi ...	5	O	16	29	5	N	13	Kartika ...	5	O	23	8	9	...	17	36	23	29	56	194	20	53		
B. S. 1268	Kartigai ...	6	N	14	30	7	D	13	Margasira ...	6	N	21	39	59	...○	44	19	25	28	29	223	52	43		
(N.) Bhava	Margali ...	1	D	14	29	1	Ja	11	Pausha ...	1	D	21	11	49	...●	10	42	27	27	3	253	24	33		
A. D. 1863	Tai ...	2	Ja	12	30	3	F	10	Magha ...	2	Ja	19	43	39	...	37	26	1	52	20	282	56	23		
H. 1280	Masi ...	4	F	11	30	5	Mr	12	Phalguna ...	4	F	18	15	29	...	5	0	3	50	54	312	28	13		
June 18	Panguni ...	6	Mr	13	30	7	Ap	11	Chaitra ...	5	Mr	19	47	19	...	33	58	5	49	27	342	0	3		
K. Y. 4964	Chittirai .	1	Ap	12	31	3	My	12	Vaisakha ...	7	Ap	18	19	9	...	4	46	7	48	1	6	16	22	0 day, 28 ghat., 9 palas.	0 „ 52 „ 23 „
Sak. 1785	Vaikasi ...	4	My	13	31	6	Je	12	Jyeshta ...	1	My	17	50	59	...○	38	10	9	46	34	35	48	12		
Vik. 1920	Ani ...	7	Je	13	32	3	Jl	14	Ashada ...	3	Je	16	22	50	...	13	51	11	45	8	65	20	2		
(S.) Rudhirogari.	Adi ...	4	Jl	15	31	6	Au	14	Sravana ...	4	Jl	15	54	40	...	51	25	13	43	42	94	51	53		
										6	Au	14	26	30	...	29	58	15	42	15	124	23	43		
K. 1038 (S. M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	7	S	12	58	20	13	9	56	17	40	49	153	55	33		
K. 1038 (N. M.)	Purattasi .	3	S	15	31	5	O	15	Asvina ...	2	O	12	30	10	...	44	4	19	39	22	183	27	23		
56 g., 34 p.	Aippasi ...	6	O	16	30	7	N	14	Kartika ...	4	N	11	2	0	...○	17	40	21	37	56	212	59	13		
B. S. 1269.	Kartigai ...	1	N	15	29	1	D	13	Margasira ...	5	D	10	33	50	...	48	43	23	36	30	242	31	3		
(N.) Yuvan	Margali ...	2	D	14	30	3	Ja	12	Pausha ...	7	Ja	9	5	40	...	17	14	25	35	3	272	2	53		
A. D. 1864	Tai ...	4	Ja	13	29	4	F	10	Magha ...	1	F	7	37	30	...	43	32	0	0	20	301	34	43		
H. 1281	Masi ...	5	F	11	30	6	Mr	11	Phalguna ...	3	Mr	8	9	21	...	8	20	1	58	54	331	6	33		
June 6	Panguni ...	7	Mr	12	30	1	Ap	10	Chaitra ...	4	Ap	6	41	11	...	32	44	3	57	27	360	38	23		
K. Y. 4965	Chittirai .	2	Ap	11	31	4	My	11	Vaisakha ...	6	My	6	13	1	5●	57	51	5	56	1	24	54	42	1 day, 51 ghat., 48 palas.	3 „ 28 „ 3 „
Sak. 1786	Vaikasi ...	5	My	12	32	1	Je	12	Jyeshta ...	7	Je	4	44	51	...	25	3	7	54	35	54	26	32		
Vik. 1921	Ani ...	2	Je	13	31	4	Jl	13	Ashada ...	2	Jl	4	16	41	...	55	38	9	53	8	83	58	22		
(S.)Raktaksha.	Adi ...	5	Jl	14	32	1	Au	14	Sravana ...	3	Au	2	48	31	...	30	44	11	51	42	113	30	13		
K. 1039 (S. M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	5	S	1	20	21	...	10	53	13	50	15	143	2	3		
K. 1039 (N. M.)	Purattasi .	5	S	15	30	6	O	14	Asvina ...	6	S	30	52	11	...	53	12	15	48	49	172	33	53		
12 g., 5 p.	Aippasi ...	7	O	15	30	1	N	13	Kartika ...	1	O	30	24	1	...	34	57	17	47	23	202	5	43		
B. S. 1270	Kartigai ...	2	N	14	30	3	D	13	Margasira ...	2	N	28	55	52	29	14	52	19	45	56	231	37	33		
(N.) Dhatri	Margali ...	4	D	14	29	4	Ja	11	Pausha ...	4	D	28	27	42	...	50	51	21	44	30	261	9	23		
A. D. 1865	Tai ...	5	Ja	12	29	5	F	9	Magha ...	5	Ja	26	59	32	27	21	12	23	43	3	290	41	13		
H. 1282	Masi ...	6	F	10	30	7	Mr	11	Phalguna ...	7	F	25	31	22	...	49	5	25	41	37	320	13	3		
May 27	Panguni ...	1	Mr	12	30	2	Ap	10	Chaitra ...	2	Mr	27	3	12	...○	12	20	0	6	54	349	44	53		

TABLE XII.—General Ephemeris A.D. 1865—A.D. 1870.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last day	Tamil Month End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Ending moment of New Moon Tithi. Mean Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	⊙'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas
K. Y. 4966	Chittirai .	3	Ap	11	31	5	M	11	Vaisakha ...	3	Ap	25	35	2	...	34	12	2	5	28	14	1	12	1 day, 2 ghat., 55 palas.	1 „ 57 „ 7 „
Sak. 1787	Vaikasi ...	6	My	12	32	2	Je	12	Jyeshta ...	5	My	25	6	52	24	54	5	4	4	1	43	33	2		
Vik. 1922	Ani ...	3	Je	13	31	5	Jl	13	Ashada ...	6	Je	23	38	42	...	16	11	6	2	35	73	4	52		
(S.) Krodhana.	Adi ...	6	Jl	14	32	2	Au	14	Sravana ...	1	Jl	23	10	33	22	42	0	8	1	8	102	36	42		
K. 1040 (S. M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada .	2	Au	21	42	23	...	13	32	9	59	41	132	8	32		
K. 1040 (N. M.)	Purattasi .	6	S	15	30	7	O	14	Asvina ...	4	S	20	14	13	19 ○	52	28	11	58	16	161	40	22		
27 g., 36 p.	Aippasi ...	1	O	15	30	2	N	13	Kartika ...	5	O	19	46	3	...	35	55	13	56	49	191	12	13		
B. S. 1271	Kartigai ...	3	N	14	30	4	D	13	Margasira ...	7	N	18	17	53	...	22	44	15	55	23	220	44	3		
(N.) Isvara	Margali ...	5	D	14	29	5	Ja	11	Pausha ...	1	D	17	49	43	18	8	18	17	53	56	250	15	53		
A. D. 1866	Tai ...	6	Ja	12	30	7	F	10	Magha ...	3	Ja	16	21	33	...	49	20	19	52	30	279	47	43		
H. 1283	Masi ...	1	F	11	29	1	Mr	11	Phalguna ...	4	F	14	53	23	15	24	8	21	51	4	309	19	33		
May 16	Panguni ...	2	Mr	12	31	4	Ap	11	Chaitra ...	6	Mr	16	25	14	... ○	54	14	23	49	37	338	51	23		
K. Y. 4967	Chittirai .	5	Ap	12	31	7	My	12	Vaisakha ...	7	Ap	14	57	4	15	15	36	25	48	11	3	7	42	0 day, 14 ghat., 2 palas.	0 „ 26 „ 8 „
Sak. 1788	Vaikasi ...	1	My	13	31	3	Je	12	Jyeshta ...	2	My	14	28	54	...	34	56	0	13	28	32	39	32		
										4	Je	13	0	44	12	52	42	2	12	2	62	11	22		
Vik. 1923	Ani ...	4	Je	13	32	7	Jl	14	Ashada ...	5	Jl	12	32	34	...	11	23	4	10	35	91	43	12		
(S.) Kshaya	Adi ...	1	Jl	15	31	3	Au	14	Sravana ...	7	Au	11	4	24	10	33	33	6	9	9	121	15	2		
K. 1041 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	1	S	9	36	14	... ○	1	42	8	7	42	150	46	52		
K. 1041 (N. M.)	Purattasi .	7	S	15	31	2	O	15	Asvina ...	3	O	9	8	4	8	37	52	10	6	16	180	18	42		
43 g., 7 p.	Aippasi ...	3	O	16	30	4	N	14	Kartika ...	4	N	7	39	54	...	20	18	12	4	49	209	50	33		
B. S. 1272	Kartigai ...	5	N	15	29	5	D	13	Margasira ...	6	D	7	11	45	...	8	44	14	3	23	239	22	23		
(N) Bahudhanya.	Margali ...	6	D	14	29	6	Ja	11	Pausha ...	7	Ja	5	43	35	...	58	2	16	1	57	268	54	13		
A. D. 1867	Tai ...	7	Ja	12	30	1	F	10	Magha ...	2	F	4	15	25	...	43	20	18	0	30	298	26	3		
H. 1284	Masi ...	2	F	11	30	3	Mr	12	Phalguna ...	3	Mr	5	47	15	6 ●○	21	40	19	59	4	327	57	53		
May 5	Panguni ...	4	Mr	13	30	5	Ap	11	Chaitra ...	5	Ap	4	19	5	...	53	5	21	57	38	357	29	43		
K. Y. 4968	Chittirai .	6	Ap	12	31	1	My	12	Vaisakha ...	6	My	3	50	55	4	16	39	23	56	11	21	46	2	1 day, 37 ghat., 42 palas.	3 „ 1 „ 47 „
Sak. 1789	Vaikasi ...	2	My	13	31	4	Je	12	Jyeshta ...	1	Je	2	22	45	...	35	59	25	54	44	51	17	52		
Vik. 1924	Ani ...	5	Je	13	32	1	Jl	14	Ashada ...	2	Jl	1	54	35	...	52	48	0	20	2	80	49	42		
(S.) Prabhava	Adi ...	2	Jl	15	31	4	Au	14	Sravana ...	4	Jl	31	26	25	...	9	53	2	18	35	110	21	32		
K. 1042 (S. M.)	Avani ...	5	Au	15	31	7	S	14	Bhadrapada .	5	Au	29	58	16	... ○	30	2	4	17	19	139	53	23		
K. 1042 (N. M.)	Purattasi .	1	S	15	31	3	O	15	Asvina ...	7	S	28	30	6	27	55	28	6	15	42	169	25	13		
58 g., 39 p.	Aippasi ...	4	O	16	30	5	N	14	Kartika ...	2	O	28	1	56	27	27	57	8	14	16	198	57	3		
B. S. 1273	Kartigai ...	6	N	15	29	6	D	13	Margasira ...	3	N	26	33	46	...	8	8	10	12	50	228	28	53		
(N.) Pramathin.	Margali ...	7	D	14	30	1	Ja	12	Pausha ...	5	D	26	5	36	25	58	33	12	11	23	258	0	43		
A. D. 1868	Tai ...	2	Ja	13	29	2	F	10	Magha ...	6	Ja	24	37	26	...	44	45	14	9	57	287	32	33		
H. 1285	Masi ...	3	F	11	30	4	Mr	11	Phalguna ...	1	F	23	9	16	...	32	24	16	8	30	317	4	23		
April 24	Panguni ...	5	Mr	12	30	6	Ap	10	Chaitra ...	2	Mr	23	41	6	24	13	56	18	7	4	346	36	13		
K. Y. 4969	Chittirai ...	7	Ap	11	31	2	My	11	Vaisakha ...	4	Ap	22	12	57	...	47	46	20	5	38	10	52	32	0 day, 48 ghat., 49 palas.	1 „ 30 „ 50 „
Sak. 1790	Vaikasi ...	3	My	12	32	6	Je	12	Jyeshta ...	5	My	21	44	47	22	14	8	22	4	12	40	24	22		
Vik. 1925	Ani ...	7	Je	13	32	2	Jl	13	Ashada ...	7	Je	20	16	37	...	35	39	24	2	45	69	56	12		
(S.) Vibhava	Adi ...	3	Jl	14	32	6	Au	14	Sravana ...	1	Jl	19	48	27	...	53	9	26	1	18	99	28	2		
K. 1043 (S. M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	3	Au	18	20	17	... ●	10	41	0	26	35	128	59	52		
K. 1043 (N. M.)	Purattasi ...	3	S	15	30	4	O	14	Asvina ...	4	S	16	52	7	...	31	33	2	25	9	158	31	42		
14 g., 10 p.	Aippasi ...	5	O	15	30	6	N	13	Kartika ...	6	O	16	23	57	15	54	19	4	23	43	188	3	32		
B. S. 1274	Kartigai ...	7	N	14	30	1	D	13	Margasira ...	7	N	14	55	48	...	24	14	6	22	16	217	35	23		
(N.) Vikrama	Margali ...	2	D	14	29	2	Ja	11	Pausha ...	2	D	14	27	38	...	0	31	8	20	50	247	7	13		
A. D. 1869	Tai ...	3	Ja	12	29	3	F	9	Magha ...	3	Ja	12	59	28	... ○	43	22	10	19	24	276	39	3		
H. 1286	Masi ...	4	F	10	30	5	Mr	11	Phalguna ...	5	F	11	31	18	...	30	16	12	17	59	306	10	53		
April 13	Panguni ...	6	Mr	12	30	7	Ap	10	Chaitra ...	7	Mr	13	3	8	...	17	27	14	16	31	335	42	43		
K. Y. 4970	Chittirai .	1	Ap	11	31	3	My	11	Vaisakha ...	1	Ap	11	34	58	12	0	43	16	15	4	365	14	33	2 days, 12 ghat., 28 palas.	4 „ 6 „ 29 „
										3	My	11	6	48	...	37	31	18	13	38	29	30	52		
Sak. 1791	Vaikasi ...	4	My	12	32	7	Je	12	Jyeshta ...	4	Je	9	38	39	10	7	16	20	12	12	59	2	42		
Vik. 1926	Ani ...	1	Je	13	31	3	Jl	13	Ashada ...	6	Jl	9	10	29	... ○	31	40	22	10	45	88	34	32		
(S.) Sukla	Adi ...	4	Jl	14	32	7	Au	14	Sravana ...	7	Au	7	42	19	...	53	11	24	9	19	118	6	22		
K. 1044 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	2	S	6	14	9	...	12	31	26	7	52	147	38	12		
K. 1044 (N. M.)	Purattasi .	4	S	15	30	5	O	14	Asvina ...	3	O	5	45	59	...	33	22	0	33	9	177	10	2		
29 g., 41 p.	Aippasi ...	6	O	15	30	7	N	13	Kartika ...	5	N	4	17	49	3	56	57	2	31	43	206	41	52		
B. S. 1275	Kartigai ...	1	N	14	30	2	D	13	Margasira ...	6	D	3	49	39	...	24	46	4	30	17	236	13	43		
(N.) Vrisha	Margali ...	[illegible]	D	14	29	3	Ja	11	Pausha ...	1	Ja	2	21	29	1 ○	57	38	6	28	50	265	45	33		
A. D. 1870	Tai ...	4	Ja	12	30	5	F	10	Magha ...	2	Ja	31	53	19	...	35	14	8	27	24	295	17	23		
H. 1287	Masi ...	6	F	11	29	6	Mr	11	Phalguna ...	4	Mr	2	25	9	...	16	50	10	25	57	324	49	13		
April 2, 3	Panguni .	7	Mr	12	31	2	Ap	11	Chaitra ...	5	Mr	31	56	59	Ap. 1.	0	21	12	24	31	354	21	3		

Kollam year K add 1

TABLE XII.—General Ephemeris A.D. 1870—A.D. 1875.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Ending moment of New Moon Tithi. Mean Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4971	Chittirai ...	3	Ap	12	31	5	My	12	Vaisakha ...	7	Ap	30	28	49	...	42	58	14	23	5	18	37	22	1 day, 23 ghat., 35 palas.	2 „ 35 „ 32 „
Sak. 1792	Vaikasi ...	6	My	13	31	1	Je	12	Jyeshta ...	2	My	30	0	40	...	21	46	16	21	38	48	9	12		
Vik. 1927	Ani ...	2	Je	13	32	5	Jl	14	Ashada ...	3	Je	28	32	30	... ○	55	24	18	20	12	77	41	2		
(S.) Pramoda	Adi ...	6	Jl	15	31	1	Au	14	Sravana ...	5	Jl	28	4	20	...	24	21	20	18	45	107	12	52		
K. 1045 (S.M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	6	Au	26	36	10	...	50	2	22	17	19	136	44	42		
K. 1045 (N.M.)	Purattasi...	5	S	15	31	7	O	15	Asvina ...	1	S	25	8	0	...	13	59	24	15	53	166	16	32		
45 g, 12 p.	Aippasi ...	1	O	16	30	2	N	14	Kartika ...	2	O	24	39	50	...	37	37	26	14	27	195	48	22		
B.S. 1276	Kartigai ...	3	N	15	29	3	D	13	Margasira ...	4	N	23	11	40	...	2	13	0	39	43	225	20	12		
(N.) Chitrabhanu.	Margali ...	4	D	14	29	4	Ja	11	Pausha ...	5	D	22	43	31	... ○	28	58	2	38	17	254	52	2		
A. D. 1871	Tai ...	5	Ja	12	30	6	F	10	Magha ...	7	Ja	21	15	21	20	58	25	4	36	50	284	23	53		
H. 1288	Masi ...	7	F	11	30	1	Mr	12	Phalguna ...	1	F	19	47	11	...	30	48	6	35	24	313	55	43		
Mr. 23	Panguni ...	2	Mr	13	30	3	Ap	11	Chaitra ...	3	Mr	21	19	1	...	6	7	8	33	58	343	27	33		
K. Y. 4972	Chittirai...	4	Ap	12	31	6	My	12	Vaisakha ...	4	Ap	19	50	51	...	43	54	10	32	31	7	43	52	0 day, 34 ghat., 42 palas.	1 „ 4 „ 34 „
Sak. 1793	Vaikasi ...	7	My	13	31	2	Je	12	Jyeshta ...	6	My	19	22	41	...	22	59	12	31	5	37	15	42		
Vik. 1928	Ani ...	3	Je	13	32	6	Jl	14	Ashada ...	7	Je	17	54	31	18●○	1	47	14	29	38	66	47	32		
(S.) Prajapati	Adi ...	7	Jl	15	31	2	Au	14	Sravana ...	2	Jl	17	26	21	...	38	38	16	28	12	96	19	22		
K. 1046 (S.M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada..	3	Au	15	58	11	16	12	55	18	26	46	125	51	12		
										5	S	14	30	1	...	44	33	20	25	19	155	23	2		
K. 1046 (N.M.)	Purattasi...	6	S	15	31	1	O	15	Asvina ...	7	O	14	1	52	...	13	33	22	23	53	184	54	52		
0 g, 44 p.	Aippasi ...	2	O	16	30	3	N	14	Kartika ...	1	N	12	33	42	...	41	41	24	22	26	214	26	42		
B. S. 1277	Kartigai ...	4	N	15	29	4	D	13	Margasira ...	3	D	12	5	32	... ●	8	33	26	21	0	243	58	33		
(N.) Subhanu.	Margali ...	5	D	14	30	6	Ja	12	Pausha ...	4	Ja	10	37	22	...	35	6	0	46	17	273	30	23		
A. D. 1872	Tai ...	7	Ja	13	29	7	F	10	Magha ...	6	F	9	9	12	...	1	55	2	44	51	303	2	13		
H. 1289	Masi ...	1	F	11	30	2	Mr	11	Phalguna ...	7	Mr	9	41	2	...	29	34	4	43	24	332	34	3		
Mr. 11	Panguni ...	3	Mr	12	30	4	Ap	10	Chaitra ...	2	Ap	8	12	52	7	58	45	6	41	58	362	5	53		
K. Y. 4973	Chittirai...	5	Ap	11	31	7	My	11	Vaisakha ...	3	My	7	44	42	... ○	30	3	8	40	31	26	22	12	1 day, 53 ghat., 21 palas.	3 „ 40 „ 14 „
Sak. 1794	Vaikasi ...	1	My	12	32	4	Je	12	Jyeshta ...	5	Je	6	16	33	... ●	3	55	10	39	5	55	54	2		
Vik. 1929	Ani ...	5	Je	13	31	7	Jl	13	Ashada ...	6	Jl	5	48	23	...	40	17	12	37	39	85	25	52		
(S.) Angirasa	Adi ...	1	Jl	14	32	4	Au	14	Sravana ...	1	Au	4	20	13	...	19	8	14	36	12	114	57	42		
K. 1047 (S.M.)	Avani ...	5	Au	15	31	7	S	14	Bhadrapada...	2	S	2	52	3	...	57	40	16	34	40	144	29	32		
K. 1047 (N.M.)	Purattasi...	1	S	15	30	2	O	14	Asvina ...	4	O	2	23	53	...	35	39	18	33	19	174	1	22		
16 g, 15 p.	Aippasi ...	3	O	15	30	4	N	13	Kartika ...	5	O	31	55	43	N.1○	11	20	20	31	53	203	33	12		
B. S. 1278	Kartigai ...	5	N	14	30	6	D	13	Margasira ...	7	N	30	27	33	...	44	16	22	30	27	233	5	2		
(N.) Tarana	Margali ...	7	D	14	29	7	Ja	11	Pausha ...	1	D	29	59	23	30	14	55	24	29	0	262	36	52		
A. D. 1873	Tai ...	1	Ja	12	29	1	F	9	Magha ...	3	Ja	28	31	14	...	41	40	26	27	34	292	8	42		
H. 1290	Masi ...	2	F	10	30	3	Mr	11	Phalguna ...	5	F	27	3	4	...	6	47	0	52	51	321	40	32		
Mr. 1	Panguni ...	4	Mr	12	31	6	Ap	11	Chaitra ...	6	Mr	28	34	54	...	30	42	2	51	24	351	12	22		
K. Y. 4974	Chittirai...	7	Ap	12	30	1	My	11	Vaisakha ...	1	Ap	27	6	44	26 ○	54	41	4	49	58	15	28	41	1 day, 9 ghat., 28 palas.	2 „ 9 „ 16 „
Sak. 1795	Vaikasi ...	2	My	12	32	5	Je	12	Jyeshta ...	2	My	26	38	34	...	20	3	6	48	32	45	0	31		
Vik. 1930	Ani ...	6	Je	13	31	1	Jl	13	Ashada ...	4	Je	25	10	24	24	48	14	8	47	5	74	32	21		
(S.) Srimukha	Adi ...	2	Jl	14	32	5	Au	14	Sravana ...	5	Jl	24	42	14	...	20	43	10	45	39	104	4	12		
K. 1048 (S.M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	7	Au	23	14	4	22	58	15	12	44	13	133	36	2		
K. 1048 (N.M.)	Purattasi...	2	S	15	30	3	O	14	Asvina ...	1	S	21	45	54	...	40	3	14	42	46	163	7	52		
31 g, 46 p.	Aippasi ...	4	O	15	30	5	N	13	Kartika ...	3	O	21	17	45	... ○	23	23	16	41	20	192	39	42		
B. S. 1279	Kartigai ...	6	N	14	30	7	D	13	Margasira ...	4	N	19	49	35	20	5	26	18	39	53	222	11	32		
(N.) Parthiva	Margali ...	1	D	14	29	1	Ja	11	Pausha ...	6	D	19	21	25	...	44	1	20	38	26	251	43	22		
A. D. 1874	Tai ...	2	Ja	12	30	3	F	10	Magha ...	7	Ja	17	53	15	18	18	0	22	37	0	281	15	12		
H. 1291	Masi ...	4	F	11	29	4	Mr	11	Phalguna ..	2	F	16	25	5	...	46	56	24	35	34	310	47	2		
Feb. 18	Panguni ...	5	Mr	12	31	7	Ap	11	Chaitra ...	3	Mr	17	56	55	18	12	32	26	34	8	340	18	52		
K. Y. 4975	Chittirai...	1	Ap	12	31	3	My	12	Vaisakha ...	5	Ap	16	28	45	... ○	33	4	0	59	25	4	35	11	0 day, 20 ghat., 35 palas.	0 „ 38 „ 18 „
Sak. 1796	Vaikasi ...	4	My	13	31	6	Je	12	Jyeshta ...	7	My	16	0	35	15	53	11	2	57	58	34	7	1		
Vik. 1931	Ani ...	7	Je	13	32	3	Jl	14	Ashada ...	1	Je	14	32	26	...	13	51	4	56	32	63	38	51		
										3	Jl	14	4	16	13	37	13	6	55	6	93	10	42		
(S.) Bhava	Adi ...	4	Jl	15	31	6	Au	14	Sravana ...	4	Au	12	36	6	...	5	34	8	53	39	122	42	32		
K. 1049 (S.M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	6	S	11	7	56	10	40	38	10	52	13	152	14	22		
K. 1049 (N.M.)	Purattasi...	3	S	15	31	5	O	15	Asvina ...	7	O	10	39	46	●○	22	23	12	50	46	181	46	12		
47 g, 17 p.	Aippasi ...	6	O	16	30	7	N	14	Kartika ...	2	N	9	11	36	...	8	56	14	49	20	211	18	2		
B. S. 1280	Kartigai ...	1	N	15	29	1	D	13	Margasira ...	3	D	8	43	26	...	56	0	16	47	54	240	49	52		
(N.) Vyaya	Margali ...	2	D	14	29	2	Ja	11	Pausha ...	5	Ja	7	15	16	...	40	0	18	46	27	270	21	42		
A. D. 1875	Tai ...	3	Ja	12	30	4	F	10	Magha ...	6	F	5	47	6	6	18	6	20	45	1	299	53	32		
H. 1292	Masi ...	5	F	11	30	6	Mr	12	Phalguna ...	1	Mr	7	18	56	...	49	28	22	43	34	329	25	22		
Feb. 7	Panguni ...	7	Mr	13	30	1	Ap	11	Chaitra ...	2	Ap	5	50	46	6 ●	14	44	24	42	8	358	57	11		

TABLE XII.—General Ephemeris A.D. 1875—A.D. 1880.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar Month.	New Moon Ending moment of New-Moon Tithi. Mean Week-day	Month	Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4976	Chittirai...	2	Ap	12	31	4	My	12	Vaisakha ...	4	My	5	22	36	...	35	22	26	40	42	23	13	31	1 day, 44 ghat., 14 palas.	3 „ 13 „ 58 „
Sak. 1797	Vaikasi ...	5	My	13	31	7	Je	12	Jyesta ...	5	Je	3	54	27	...	53	18	1	5	59	52	45	21		
Vik. 1932	Ani ...	1	Je	13	32	4	Jl	14	Ashada ...	7	Jl	3	26	17	...	10	56	3	4	32	82	17	11		
(S.) Yuva	Adi ...	5	Jl	15	31	7	Au	14	Sravana ...	1	Au	1	58	7	...	30	57	5	3	6	111	49	1		
K. 1050 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	3	Au	31	29	57	30	55	57	7	1	39	141	20	52		
K. 1050 (N.M.)	Purattasi .	4	S	15	31	6	O	15	Asvina ...	5	S	30	1	47	29●	27	50	9	0	13	170	52	42		
2 g, 49 p.	Aippasi ...	7	O	16	30	1	N	14	Kartika ...	6	O	29	33	37	...	7	30	10	58	47	200	24	32		
B. S. 1281	Kartigai ...	2	N	15	29	2	D	13	Margasira ...	1	N	28	5	27	27	53	54	12	57	20	229	56	22		
(N.) Sarvajit	Margali ...	3	D	14	30	4	Ja	12	Pausha ...	2	D	27	37	17	...	43	37	14	55	54	259	28	12		
A. D. 1876	Tai ...	5	Ja	13	29	5	F	10	Magha ...	4	Ja	26	9	8	...	31	33	16	54	27	289	0	2		
H. 1293	Masi ...	6	F	11	30	7	Mr	11	Phalguna ...	5	F	24	40	58	25○	13	24	18	53	1	318	31	52		
Ja. 28	Panguni ...	1	Mr	12	30	2	Ap	10	Chaitra ...	7	Mr	25	12	48	...	47	54	20	51	35	348	3	42		
K. Y. 4977	Chittirai .	3	Ap	11	31	5	My	11	Vaisaka ...	1	Ap	23	44	38	24	14	58	22	50	8	12	20	1	0 day, 55 ghat., 21 palas.	1 „ 43 „ 0 „
Sak. 1798	Vaikasi ...	6	My	12	32	2	Je	12	Jyeshta ...	3	My	23	16	28	...	36	14	24	48	42	41	51	51		
Vik. 1933	Ani ...	3	Je	13	31	5	Jl	13	Ashada ...	4	Je	21	48	18	...	53	52	26	47	15	71	28	41		
(S.) Dhatri	Adi ...	6	Jl	14	32	2	Au	14	Sravana ...	6	Jl	21	20	8	...	10	27	1	12	32	100	55	31		
K. 1051 (S. M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada .	7	Au	19	51	58	...○	28	54	3	11	5	130	27	21		
K. 1051 (N. M.)	Purattasi .	6	S	15	30	7	O	14	Asvina ...	2	S	18	23	49	17	51	38	5	9	38	159	59	11		
18 g, 20 p.	Aippasi ...	1	O	15	30	2	N	13	Kartika ...	3	O	17	55	39	...	20	42	7	8	11	189	31	2		
B. S. 1282	Kartigai .	3	N	14	30	4	D	13	Margasira ...	5	N	16	27	29	15	57	8	9	6	44	219	2	52		
(N.) Sarvadharin.	Margali ...	5	D	14	29	5	Ja	11	Pausha ...	6	D	15	59	19	...	40	57	11	5	17	248	34	42		
A. D. 1877	Tai ...	6	Ja	12	29	6	F	9	Magha ...	1	Ja	14	31	9	...	29	42	13	3	50	278	6	32		
H. 1294	Masi ...	7	F	10	30	1	Mr	11	Phalguna ...	3	F	13	2	59	...○	17	25	15	2	23	307	38	22		
Ja. 16	Panguni ...	2	Mr	12	31	4	Ap	11	Chaitra ...	4	Mr	14	34	49	15●	3	35	17	0	56	337	10	12		
K. Y. 4978	Chittirai .	5	Ap	12	30	6	My	11	Vaisaka ..	6	Ap	13	6	39	...	41	8	18	59	29	1	26	31	0 day, 6 ghat., 28 palas.	0 „ 12 „ 3 „
Sak. 1799	Vaikasi ...	7	My	12	32	3	Je	12	Jyeshta ...	7	My	12	38	29	13	11	1	20	58	2	30	58	21		
										2	Je	11	10	19	...	34	29	22	56	35	60	30	11		
Vik. 1934	Ani ...	4	Je	13	31	6	Jl	13	Ashada ...	3	Jl	10	42	10	...	53	43	24	55	8	90	2	1		
(S.) Isvara.	Adi ...	7	Jl	14	32	3	Au	14	Sravana ...	5	Au	9	14	0	...○	11	24	26	53	42	119	33	51		
K. 1052 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	6	S	7	45	50	...	30	3	1	18	59	149	5	41		
K. 1052(N. M.)	Purattasi .	7	S	15	30	1	O	14	Asvina ...	1	O	7	17	40	6	51	56	3	17	29	178	37	31		
33 g, 51 p.	Aippasi ...	2	O	15	30	3	N	13	Kartika ...	2	N	5	49	30	...	18	47	5	16	3	208	9	21		
B. S. 1283	Kartigai ...	4	N	14	30	5	D	13	Margasira ...	4	D	5	21	20	4	51	56	7	14	36	237	41	11		
(N.) Virodhin	Margali ...	6	D	14	29	6	Ja	11	Pausha ...	5	Ja	3	53	10	...	31	34	9	13	10	267	13	1		
A. D. 1878	Tai ...	7	Ja	12	30	1	F	10	Magha ...	7	F	2	25	0	...○	16	24	11	11	44	296	44	51		
H. 1295	Masi ...	2	F	11	29	2	Mr	11	Phalguna ...	1	Mr	3	56	50	4	3	25	13	10	17	326	16	41		
Ja. 5	Panguni ...	3	Mr	12	31	5	Ap	11	Chaitra ...	3	Ap	2	28	40	...	49	38	15	8	50	355	48	31		
K. Y. 4979	Chittirai...	6	Ap	12	31	1	My	12	Vaisaka ...	5	My	2	0	31	...	28	38	17	7	24	20	4	51	1 day, 30 ghat., 8 palas.	2 „ 47 „ 42 „
Sak. 1800	Vaikasi ...	2	My	13	31	4	Je	12	Jyesta ...	6	My	31	32	21	Je. 1.	1	53	19	5	58	49	36	41		
Vik. 1935	Ani ...	5	Je	13	32	1	Jl	14	Ashada ...	1	Je	30	4	11	...	28	53	21	4	32	79	8	31		
(S.) Bahudhanya.	Adi ...	2	Jl	15	31	4	Au	14	Sravana ...	2	Jl	29	36	1	...○	51	34	23	3	5	108	40	21		
K. 1053 (S. M.)	Avani ...	5	Au	15	31	7	S	14	Bhadrapada .	4	Au	28	7	51	...	12	14	25	1	39	138	12	11		
K. 1053 (N. M.)	Purattasi .	1	S	15	31	3	O	15	Asvina ...	5	S	26	39	41	...	32	55	27	0	12	167	44	1		
49 g, 22 p.	Aippasi . .	4	O	16	30	5	N	14	Kartika ...	7	O	26	11	32	25	55	21	1	25	30	197	15	51		
B. S. 1284	Kartigai ...	6	N	15	29	6	D	13	Margasira ...	1	N	24	43	22	...	21	10	3	24	3	226	47	42		
(N.) Vikrita	Margali ...	7	D	14	29	7	Ja	11	Pausha ...	3	D	24	15	12	23	51	22	5	22	37	256	19	32		
A. D. 1879	Tai ...	1	Ja	12	30	2	F	10	Magha ...	4	Ja	22	47	2	...●	27	23	7	21	10	285	51	22		
H. 1297	Masi ...	3	F	11	30	4	Mr	12	Phalguna ...	6	F	21	18	52	...	5	34	9	19	44	315	23	12		
Dec. 15	Panguni ...	5	Mr	13	30	6	Ap	11	Chaitra ...	7	Mr	22	50	42	..	47	28	11	18	18	344	55	2		
K. Y. 4980	Chittirai...	7	Ap	12	31	2	My	12	Vaisakha ...	2	Ap	21	22	32	...	30	25	13	16	51	9	11	21	0 day, 41 ghat., 14 palas.	1 „ 16 „ 44 „
Sak. 1801	Vaikasi ...	3	My	13	31	5	Je	12	Jyesta ...	3	My	20	54	22	21	11	5	15	15	25	38	43	11		
Vik. 1936	Ani ...	6	Je	13	32	2	Jl	14	Ashada ...	5	Je	19	26	13	...	47	19	17	13	58	68	15	1		
(S.) Pramathi	Adi ...	3	Jl	15	31	5	Au	14	Sravana ...	6	Jl	18	58	3	19	18	54	19	12	32	97	46	51		
K. 1054 (S. M.)	Avani ...	6	Au	15	32	2	S	15	Bhadrapada .	1	Au	17	29	53	...	46	35	21	11	6	127	18	41		
K. 1054 (N. M.)	Purattasi...	3	S	16	30	4	O	15	Asvina ...	3	S	16	1	43	...	11	55	23	9	39	156	50	31		
										4	O	15	33	33	...	36	9	25	8	13	186	22	21		
4 g, 54 p.	Aippasi ...	5	O	16	30	6	N	14	Kartika ...	6	N	14	5	23	...○	0	39	27	6	46	215	54	12		
B. S. 1285	Kartigai ...	7	N	15	29	7	D	13	Margasira ...	7	D	13	37	13	...	26	24	1	32	3	245	26	2		
(N.) Khara	Margali ...	1	D	14	30	2	Ja	12	Pausha ...	2	Ja	12	9	3	11	54	22	3	30	37	274	57	52		
A. D. 1880	Tai ...	3	Ja	13	29	3	F	10	Magha ...	3	F	10	40	53	...	24	50	5	29	11	304	29	42		
H. 1298	Masi ...	4	F	11	30	5	Mr	11	Phalguna ...	5	Mr	11	12	44	10	58	5	7	27	44	334	1	32		
Dec. 4.	Panguni ...	6	Mr	12	30	7	Ap	10	Chaitra ...	6	Ap	9	44	34	...	34	9	9	26	18	363	33	22		

Kollam years K add 1

TABLE XII.—General Ephemeris A.D. 1880—A.D. 1885.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Day (mean)	Ending moment of New Moon Tithi Mean Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4981	Chittirai ...	1	Ap	11	31	3	My	11	Vaisakha ...	1	My	9	16	24	...	11	47	11	24	53	27	49	41	2 days, 4 ghat., 54 palas.	3 „ 52 „ 24 „
Sak. 1802	Vaikasi ...	4	My	12	32	7	Je	12	Jyeshta ...	2	Je	7	48	14	...○	50	28	13	23	27	57	21	31		
Vik. 1937	Ani ...	1	Je	13	31	3	Jl	13	Ashada ...	4	Jl	7	20	4	...	28	25	15	22	0	86	53	21		
(S.) Vikrama	Adi ...	4	Jl	14	32	7	Au	14	Sravana ...	5	Au	5	51	54	6	4	25	17	20	34	116	25	11		
K. 1055 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	7	S	4	23	44	...	38	4	19	19	8	145	57	1		
K. 1055 (N. M.)	Purattasi .	4	S	15	30	5	O	14	Asvina ...	1	O	3	55	34	4	9	16	21	17	41	175	28	51		
20 g., 25 p.	Aippasi ...	6	O	15	30	7	N	13	Kartika ...	3	N	2	27	25	...	38	28	23	16	15	205	0	41		
B. S. 1286	Kartigai ...	1	N	14	30	2	D	13	Margasira ...	4	D	1	59	15	20○	6	9	25	14	48	234	32	32		
(N.) Nandana	Margali ...	3	D	14	29	3	Ja	11	Pausha ...	6	D	31	31	5	...	32	59	27	13	22	264	4	22		
A. D. 1881	Tai ...	4	Ja	12	29	4	F	9	Magha ...	1	Ja	30	2	55	29	59	27	1	38	39	293	36	12		
H. 1299	Masi ...	5	F	10	30	6	Mr	11	Phalguna ...	2	F	28	34	45	...	26	10	3	37	13	323	8	2		
Nov. 23	Panguni ...	7	Mr	12	31	2	Ap	11	Chaitra ...	4	Mr	30	6	35	29	53	50	5	35	46	352	39	52		
K. Y. 4982	Chittirai...	3	Ap	12	31	5	My	12	Vaisakha ...	5	Ap	28	38	25	...	23	39	7	34	20	16	56	11	1 day, 16 ghat., 0 palas.	2 „ 21 „ 27 „
Sak. 1803	Vaikasi ...	6	My	13	31	1	Je	12	Jyeshta ...	7	My	28	10	15	27●○	55	6	9	32	54	46	28	1		
Vik. 1938	Ani ...	2	Je	13	32	5	Jl	14	Ashada ...	1	Je	26	42	16	...	29	58	11	31	27	75	59	51		
(S.) Vrisha	Adi ...	6	Jl	15	31	1	Au	14	Sravana ...	3	Jl	26	13	56	...	7	0	13	30	1	105	31	41		
K. 1056 (S. M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	4	Au	24	45	46	...	46	33	15	28	34	135	3	31		
K 1056 (N. M.)	Purattasi .	6	S	15	30	6	O	14	Asvina ...	6	S	23	17	36	...	25	55	17	27	8	164	35	21		
35 g., 56 p.	Aippasi ...	7	O	15	30	1	N	13	Kartika ...	7	O	22	49	26	23	3	38	19	25	42	194	7	11		
B. S. 1287	Kartigai ...	2	N	14	30	3	D	13	Margasira ...	2	N	21	21	16	...○	38	40	21	24	15	223	39	1		
(N.) Vijaya	Margali ...	4	D	14	29	4	Ja	11	Pausha ...	3	D	20	53	6	21	11	14	23	22	49	253	10	52		
A. D. 1882	Tai ...	5	Ja	12	30	6	F	10	Magha ...	5	Ja	19	24	56	...	39	22	25	21	22	282	42	42		
H. 1300	Masi ...	7	F	11	30	1	Mr	12	Phalguna ...	6	F	17	56	46	18	5	17	27	19	56	312	14	32		
Nov. 12	Panguni ...	2	Mr	13	30	3	Ap	11	Chaitra ...	1	Mr	19	28	36	...	29	14	1	45	13	341	46	22		
K. Y. 4983	Chittirai...	4	Ap	12	31	6	My	12	Vaisakha ...	3	Ap	18	0	27	17	52	27	3	43	47	6	2	41	0 day, 2[illegible] ghat., 8 palas.	0 „ 50 „ 29 „
Sak. 1804	Vaikasi ...	7	My	13	31	2	Je	12	Jyeshta ...	4	My	17	32	17	...●	16	16	5	42	20	35	34	31		
Vik. 1939	Ani ...	3	Je	13	32	6	Jl	14	Ashada ...	6	Je	16	4	7	15	42	18	7	40	54	65	6	21		
(S.) Chitrabhanu.	Adi ...	7	Jl	15	31	2	Au	14	Sravana ...	7	Jl	15	35	57	...	12	2	9	39	27	94	38	11		
										2	Au	14	7	47	13	47	6	11	38	1	124	10	1		
K. 1057 (S. M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada .	3	S	12	39	37	...	27	18	13	36	35	153	41	51		
K. 1057 (N. M.)	Purattasi .	6	S	15	31	1	O	15	Asvina ...	5	O	12	11	27	...	10	50	15	35	8	133	13	41		
51 g., 27 p.	Aippasi ...	2	O	16	30	3	N	14	Kartika ...	6	N	10	43	17	...	54	33	17	33	42	212	45	31		
B. S. 1288	Kartigai ...	4	N	15	29	4	D	13	Margasira ...	1	D	10	15	8	...	35	42	19	32	15	242	17	21		
(N.) Jaya	Margali ...	5	D	14	30	6	Ja	12	Pausha ...	2	Ja	8	46	58	9	12	24	21	30	48	271	49	11		
A. D. 1883	Tai ...	7	Ja	13	29	7	F	10	Magha ...	4	F	7	18	48	...	43	50	23	29	22	301	21	2		
H. 1301	Masi ...	1	F	11	30	2	Mr	12	Phalguna ...	5	Mr	8	50	38	9	10	18	25	27	56	330	52	52		
Nov. 2	Panguni ...	3	Mr	13	30	4	Ap	11	Chaitra ...	7	Ap	7	22	28	...○	32	46	27	26	30	360	24	42		
K. Y. 4984	Chittirai ...	5	Ap	12	31	7	My	12	Vaisakha ...	1	My	6	54	18	...	53	54	1	51	47	24	41	1	1 day, 50 ghat., 47 palas.	3 „ 26 „ 9 „
Sak. 1805	Vaikasi ...	1	My	13	31	3	Je	12	Jyeshta ...	3	Je	5	26	8	...	12	33	3	50	20	54	12	51		
Vik. 1940	Ani ...	4	Je	13	32	7	Jl	14	Ashada ...	4	Jl	4	57	59	...	33	49	5	48	53	83	44	41		
(S.) Subhanu	Adi ...	1	Jl	15	32	4	Au	15	Sravana ...	6	Au	3	29	49	2	59	20	7	47	28	113	16	31		
K. 1058 (S. M.)	Avani ...	5	Au	16	31	7	S	15	Bhadrapada .	1	S	2	1	39	1	30	59	9	46	1	142	48	21		
K. 1058 (N. M.)	Purattasi .	1	S	16	30	2	O	15	Asvina ...	2	O	1	33	29	...○	9	45	11	44	35	172	20	11		
6 g., 59 p.	Aippasi ...	3	O	16	30	4	N	14	Kartika ...	4	O	31	5	19	30	54	37	13	43	8	201	52	1		
B. S. 1289	Kartigai ...	5	N	15	29	5	D	13	Margasira ...	5	N	29	37	9	...	41	29	15	41	42	231	23	51		
(N.) Manmatha.	Margali ...	6	D	14	30	7	Ja	12	Pausha ...	7	D	29	8	59	...	28	54	17	40	16	260	55	42		
A. D. 1884	Tai ...	1	Ja	13	29	1	F	10	Magha ...	1	Ja	27	40	49	28	10	21	19	38	49	290	27	32		
H. 1302	Masi ...	2	F	11	30	3	Mr	11	Phalguna ...	3	F	26	12	39	...	45	2	21	37	23	319	59	22		
Oct. 21.	Panguni ...	4	Mr	12	30	5	Ap	10	Chaitra ...	4	Mr	26	44	29	27○	12	58	23	35	56	349	31	12		
K. Y. 4985	Chittirai...	6	Ap	11	31	1	My	11	Vaisakha ...	6	Ap	25	16	20	...	35	24	25	34	30	13	47	31	1 day, 1 ghat., 54 palas.	1 „ 55 „ 11 „
Sak. 1806	Vaikasi ...	2	My	12	32	5	Je	12	Jyeshta ...	7	My	24	48	10	...	54	6	27	33	4	43	19	21		
Vik. 1941	Ani ...	6	Je	13	31	1	Jl	13	Ashada ...	2	Je	23	20	0	...	11	19	1	58	21	72	51	11		
(S.) Tarana	Adi ...	2	Jl	14	32	5	Au	14	Sravana ...	3	Jl	22	51	50	...	28	39	3	56	54	102	23	1		
K. 1059 (S. M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	5	Au	21	23	40	20	51	53	5	55	28	131	54	51		
K. 1059 (N. M.)	Purattasi .	2	S	15	30	3	O	14	Asvina ...	6	S	19	55	30	...○	20	17	7	54	1	161	26	41		
22 g., 30 p.	Aippasi ...	4	O	15	30	5	N	13	Kartika ...	1	O	19	27	20	18	56	51	9	52	35	190	58	31		
B. S. 1290	Kartigai ...	6	N	14	30	7	D	13	Margasira ...	2	N	17	59	10	...	39	56	11	51	9	220	30	21		
(N.) Durmukha.	Margali ...	1	D	14	29	1	Ja	11	Pausha ...	4	D	17	31	0	...	28	38	13	49	42	250	2	11		
A. D. 1885	Tai ...	2	Ja	12	29	2	F	9	Magha ...	6	Ja	16	2	51	...	18	14	15	48	16	279	34	1		
H. 1303	Masi ...	3	F	10	30	4	Mr	11	Phalguna ...	7	F	14	34	41	15	4	42	17	46	49	309	5	52		
Oct. 10	Panguni ...	5	Mr	12	31	7	Ap	11	Chaitra ...	2	Mr	16	6	31	...○	41	32	19	45	23	338	37	42		

TABLE XII.—General Ephemeris A.D. 1885—A.D. 1890.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar month.	New Moon Ending moment of New Moon Tithi. Week-day	Month	Mean Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	⊙'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4986	Chittirai ...	1	Ap	12	31	3	My	12	Vaisakha ...	3	Ap	14	38	21	15	12	35	21	43	57	2	54	1	0 day, 13 ghat., 1 pala.	0 „ 24 „ 14 „
Sak. 1807	Vaikasi ...	4	My	13	31	6	Je	12	Jyeshta ...	5	My	14	10	11	...	35	45	23	42	30	32	25	51		
										6	Je	12	42	1	...	54	42	25	41	4	61	57	41		
Vik. 1942	Ani ...	7	Je	13	32	3	Jl	14	Ashada ...	1	Jl	12	13	51	...	11	26	0	6	21	91	29	31		
(S.) Parthiva	Adi ...	4	Jl	15	31	6	Au	14	Sravana ...	2	Au	10	45	41	...	28	46	2	4	54	121	1	21		
K. 1060 (S. M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	4	S	9	17	32	8○	49	20	4	3	28	150	33	11		
K. 1060 (N. M.)	Purattasi .	3	S	15	31	5	O	15	Asvina ...	5	O	8	49	22	...	15	13	6	2	2	180	5	1		
38 g., 1 p.	Aippasi ...	6	O	16	29	6	N	13	Kartika ...	7	N	7	21	12	6	48	2	8	0	35	209	36	51		
B. S. 1291	Kartigai ...	7	N	14	30	1	D	13	Margasira ...	1	D	6	53	2	...	28	24	9	59	9	239	8	41		
(N.) Hemalamba.	Margali ...	2	D	14	29	2	Ja	11	Pausha ...	3	Ja	5	24	52	...	15	5	11	57	42	268	40	31		
A. D. 1886	Tai ...	3	Ja	12	30	4	F	10	Magha ...	4	F	3	56	42	4	4	29	13	56	16	298	12	22		
H. 1304	Masi ...	5	F	11	30	6	Mr	12	Phalguna ...	6	Mr	5	28	32	...	51	38	15	54	50	327	44	12		
Sep. 30	Panguni ...	7	Mr	13	30	1	Ap	11	Chaitra ...	1	Ap	4	0	22	...	32	41	17	53	23	357	16	2		
K. Y. 4987	Chittirai...	2	Ap	12	31	4	My	12	Vaisakha ...	2	My	3	32	13	4	6	4	19	51	51	21	32	21	1 day, 36 ghat., 40 palas.	2 „ 59 „ 53 „
Sak. 1808	Vaikasi ...	5	My	13	31	7	Je	12	Jyeshta ...	4	Je	2	4	3	...	32	28	21	50	30	51	4	11		
Vik. 1943	Ani ...	1	Je	13	32	4	Jl	14	Ashada ...	5	Jl	1	35	53	...	53	37	23	49	4	80	36	1		
(S.) Vyasa	Adi ...	5	Jl	15	32	7	Au	14	Sravana ...	7	Jl	31	7	43	...	11	53	25	47	38	110	7	51		
K. 1061 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	1	Au	29	39	33	...	30	13	0	12	55	139	39	41		
K. 1061 (N. M.)	Purattasi .	4	S	15	31	6	O	15	Asvina ...	3	S	28	11	23	27	50	29	2	11	28	169	11	31		
53 g., 32 p.	Aippasi ...	7	O	16	30	1	N	14	Kartika ...	4	O	27	43	13	...	14	58	4	10	2	198	43	21		
B. S. 1292	Kartigai...	2	N	15	29	2	D	13	Margasira ..	6	N	26	15	3	25	45	5	6	8	36	228	15	11		
(N.) Vilamba	Margali ...	3	D	14	30	4	Ja	12	Pausha ...	7	D	25	46	53	...	21	21	8	7	9	257	47	1		
A. D. 1887	Tai ...	5	Ja	13	29	5	F	10	Magha ...	2	Ja	24	18	44	...○	3	46	10	5	43	287	18	51		
H. 1305	Masi ...	6	F	11	30	7	Mr	12	Phalguna ...	3	F	22	50	34	...	49	39	12	4	16	316	50	41		
Sep. 19	Panguni...	1	Mr	13	30	2	Ap	11	Chaitra ...	5	Mr	24	22	24	...	35	46	14	2	50	346	22	31		
K. Y. 4988	Chittirai...	3	Ap	12	31	5	My	12	Vaisakha ...	6	Ap	22	54	14	23	18	18	16	1	24	10	38	51	0 day, 47 ghat., 47 palas.	1 „ 28 „ 55 „
Sak. 1809	Vaikasi ...	6	My	13	32	1	Je	12	Jyeshta ...	1	My	22	26	4	...	54	44	17	59	57	40	10	41		
Vik. 1944	Ani ...	2	Je	13	31	5	Jl	14	Ashada ...	2	Je	20	57	54	21	24	40	19	58	31	69	42	31		
(S.) Sarvajit	Adi ...	6	Jl	15	32	2	Au	15	Sravana ...	4	Jl	20	29	44	...○	49	31	21	57	4	99	14	21		
K. 1062 (S. M.)	Avani ...	3	Au	16	31	5	S	15	Bhadrapada .	6	Au	19	1	34	...●	11	20	23	55	37	128	46	11		
K. 1062 (N. M.)	Purattasi .	6	S	16	30	7	O	15	Asvina ...	7	S	17	33	25	...	32	19	25	54	12	158	18	1		
9 g., 4 p.	Aippasi ...	1	O	16	30	2	N	14	Kartika ...	2	O	17	5	15	16	54	8	0	19	29	187	49	51		
B. S. 1293	Kartigai ...	3	N	15	29	3	D	13	Margasira ...	3	N	15	37	5	...	18	25	2	18	2	217	21	41		
(N.) Vikarin	Margali ...	4	D	14	30	5	Ja	12	Pausha ...	5	D	15	8	55	14	46	30	4	16	36	246	53	31		
A. D. 1888	Tai ...	6	Ja	13	29	6	F	10	Magha ...	6	Ja	13	40	45	...○	19	0	6	15	9	276	25	21		
H. 1306	Masi ...	7	F	11	30	1	Mr	11	Phalguna ...	1	F	12	12	35	11	55	45	8	13	43	305	57	11		
Sep. 7	Panguni ...	2	Mr	12	30	3	Ap	10	Chaitra ...	2	Mr	12	44	25	...	36	1	10	12	17	335	29	2		
										4	Ap	11	16	15	...	18	7	12	10	50	365	0	52		
K. Y. 4989	Chittirai...	4	Ap	11	31	6	My	11	Vaisakha ...	5	My	10	48	5	...	59	37	14	9	24	29	17	11	2 days, 11 ghat., 26 palas.	4 „ 4 „ 35 „
Sak. 1810	Vaikasi ...	7	My	12	32	3	Je	12	Jyeshta ...	7	Je	9	19	55	...	38	29	16	7	57	58	49	1		
Vik. 1945	Ani ...	4	Je	13	31	6	Jl	13	Ashada ...	1	Jl	8	51	46	9○	11	58	18	6	31	88	20	51		
(S.) Sarvadhari.	Adi ...	7	Jl	14	32	3	Au	14	Sravana ...	3	Au	7	23	36	...	41	51	20	5	5	117	52	41		
K. 1063 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	4	S	5	55	26	6	8	56	22	3	38	147	24	31		
K. 1063 (N. M.)	Purattasi .	7	S	15	30	1	O	14	Asvina ...	6	O	5	27	16	...	34	7	24	2	12	176	56	21		
24 g., 35 p.	Aippasi ...	2	O	15	30	3	N	13	Kartika ...	7	N	3	59	6	...	58	52	26	0	45	206	28	11		
B. S. 1294	Kartigai ...	4	N	14	30	5	D	13	Margasira ...	2	D	3	30	56	...	24	13	0	26	2	236	0	1		
(N.) Sarvari	Margali ...	6	D	14	29	6	Ja	11	Pausha ...	4	Ja	2	2	46	1○	50	11	2	24	36	265	31	51		
A. D. 1889	Tai ...	7	Ja	12	30	1	F	10	Magha ...	5	Ja	31	34	37	...	20	3	4	23	10	295	3	41		
H. 1307	Masi ...	2	F	11	29	2	Mr	11	Phalguna ...	7	Mr	2	6	27	1	51	20	6	21	43	324	35	31		
Aug. 28.	Panguni ...	3	Mr	12	31	5	Ap	11	Chaitra ...	1	Mr	31	38	17	...	25	10	8	20	17	354	7	21		
K. Y. 4990	Chittirai...	6	Ap	12	31	1	My	12	Vaisakha ...	3	Ap	30	10	7	...	1	23	10	18	50	18	23	41	1 day, 22 ghat., 33 palas.	2 „ 33 „ 37 „
Sak. 1811	Vaikasi ...	2	My	13	31	4	Je	12	Jyeshta ...	4	My	29	41	57	...	39	13	12	17	24	47	55	31		
Vik. 1946	Ani ...	5	Je	13	32	1	Jl	14	Ashada ...	6	Je	28	13	47	●○	17	29	14	15	58	77	27	21		
(S.) Virodhi	Adi ...	2	Jl	15	31	4	Au	14	Sravana ...	7	Jl	27	45	37	...	54	47	16	14	31	106	59	11		
K. 1064 (S. M.)	Avani ...	5	Au	15	31	7	S	14	Bhadrapada .	2	Au	26	17	27	...	30	14	18	13	4	136	31	1		
K. 1064 (N. M.)	Purattasi .	1	S	15	31	3	O	15	Asvina ...	3	S	24	49	17	25	3	23	20	11	38	166	2	51		
40 g., 6 p.	Aippasi ...	4	O	16	29	4	N	13	Kartika ...	5	O	24	21	8	...	34	18	22	10	12	195	34	41		
B. S. 1295	Kartigai ...	5	N	14	30	6	D	13	Margasira ...	6	N	22	52	58	23	3	13	24	8	46	225	6	31		
(N.) Plava	Margali ...	7	D	14	29	7	Ja	11	Pausha ...	1	D	22	24	48	...	31	20	26	7	19	254	38	21		
A. D. 1890	Tai ...	1	Ja	12	30	2	F	10	Magha ...	2	Ja	20	56	38	...	57	17	0	32	36	284	10	11		
H. 1308	Masi ...	3	F	11	30	4	Mr	12	Phalguna ...	4	F	19	28	28	...	23	25	2	31	10	313	42	1		
Aug. 17.	Panguni ...	5	Mr	13	30	6	Ap	11	Chaitra ...	6	Mr	21	0	18	20	50	0	4	29	44	343	13	51		

Kollam years K add 1

TABLE XII.—General Ephemeris A.D. 1890—A.D. 1895.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning				Tamil Month End			Lunar month.	New Moon			Ending moment of New Moon Tithi. Mean		Actual			☾'s Anom.			☉'s Anom.			Deduct for Nakshatras	Deduct for Yogas.
		Week-day	Month	Day	Last Day	Week-day	Month	Day		Week-day	Month	Day (mean)	Ghatikas	Palas	Day (actual)	Ghatikas	Palas	Day	Ghatikas	Palas	Day	Ghatikas	Palas		
K. Y. 4991	Chittirai .	7	Ap	12	31	2	My	12	Vaisakha ...	7	Ap	19	32	8	...	17	45	6	28	13	7	30	10	0 day, 33 ghat., 40 palas.	1 „ 2 „ 40 „
Sak. 1812	Vaikasi ...	3	My	13	31	5	Je	12	Jyeshta ...	2	My	19	3	58	18○	47	33	8	26	46	37	2	0		
Vik. 1947	Ani ...	6	Je	13	32	2	Jl	14	Ashada ...	3	Je	17	35	48	...●	20	13	10	25	19	66	33	50		
(S.) Vikrita	Adi ...	3	Jl	15	31	5	Au	14	Sravana ...	5	Jl	17	7	39	16	56	4	12	23	53	96	5	41		
K. 1065 (S. M.)	Avani ...	6	Au	15	31	1	S	14	Bhadrapada .	6	Au	15	39	29	...	34	53	14	22	26	125	37	31		
										1	S	14	11	19	...	14	52	16	21	0	155	9	21		
K. 1065 (N. M.)	Purattasi .	2	S	15	31	4	O	15	Asvina ...	2	O	13	43	9	...	54	33	18	19	34	184	41	11		
55 g., 37 p.	Aippasi ...	5	O	16	30	6	N	14	Kartika ...	4	N	12	14	59	...○	31	45	20	18	7	214	13	1		
B. S. 1296	Kartigai .	7	N	15	29	7	D	13	Margasira ...	5	D	11	46	49	12●	5	48	22	16	41	243	44	51		
(N.) Subhakrit	Margali ...	1	D	14	30	2	Ja	12	Pausha ...	7	Ja	*10	18	39	...	36	22	24	15	14	273	16	41		
A. D. 1891	Tai ...	3	Ja	13	29	3	F	10	Magha ...	1	F	8	50	29	9	3	34	26	13	48	302	48	31		
H. 1309	Masi ...	4	F	11	30	5	Mr	12	Phalguna ...	3	Mr	10	22	20	...	28	1	0	39	5	332	20	21		
Aug. 7	Panguni ...	6	Mr	13	30	7	Ap	11	Chaitra ...	4	Ap	8	54	10	...	50	52	2	37	39	361	52	11		
K. Y. 4992	Chittirai .	1	Ap	12	31	3	My	12	Vaisakha ...	6	My	8	26	0	...○	13	39	4	36	12	26	8	30	1 day, 57 ghat., 20 palas.	3 „ 38 „ 19 „
Sak. 1813	Vaikasi ..	4	My	13	32	7	Je	13	Jyeshta ...	7	Je	6	57	50	...	37	45	6	34	46	55	40	20		
Vik. 1948	Ani ...	1	Je	14	31	3	Jl	14	Ashada ...	2	Jl	6	29	40	...	5	1	8	33	19	85	12	10		
(S.) Khara	Adi ...	4	Jl	15	32	7	Au	15	Sravana ...	4	Au	5	1	30	4	37	11	10	31	53	114	44	0		
K. 1066 (S. M.)	Avani ...	1	Au	16	31	3	S	15	Bhadrapada .	5	S	3	33	20	...	15	4	12	30	27	144	15	50		
K. 1066. (N. M.)	Purattasi .	4	S	16	30	5	O	15	Asvina ...	7	O	3	5	10	2	57	46	14	29	0	173	47	40		
11 g., 9 p.	Aippasi ...	6	O	16	30	7	N	14	Kartika ...	1	N	1	37	1	...○	42	27	16	27	34	203	19	30		
B. S. 1297	Kartigai .	1	N	15	29	1	D	13	Margasira ...	3	D	1	8	51	...	25	50	18	26	7	232	51	21		
(N.) Sobhana	Margali ...	2	D	14	30	3	Ja	12	Pausha ...	4	D	30	40	41	31	5	18	20	24	41	262	23	11		
A. D. 1892	Tai ...	4	Ja	13	29	4	F	10	Magha ...	6	Ja	29	12	31	...	39	36	22	23	15	291	55	1		
H. 1310	Masi ...	5	F	11	30	6	Mr	11	Phalguna ...	7	F	27	44	21	28	8	17	24	21	48	321	26	51		
July 26	Panguni .	7	Mr	12	30	1	Ap	10	Chaitra ...	2	Mr	28	16	11	...	32	15	26	20	22	350	58	41		
K. Y. 4993	Chittirai .	2	Ap	11	31	4	My	11	Vaisakha ...	3	Ap	26	48	1	...○	52	53	0	45	39	15	15	0	1 day, 8 ghat., 27 palas.	2 „ 7 „ 21 „
Sak. 1814	Vaikasi ...	5	My	12	32	1	Je	12	Jyeshta ...	5	My	26	19	51	...	11	44	2	44	12	44	46	50		
Vik. 1949	Ani ...	2	Je	13	31	4	Jl	13	Ashada ...	6	Je	24	51	41	...	31	52	4	42	46	74	18	40		
(S.) Nandana	Adi ...	5	Jl	14	32	1	Au	14	Sravana ...	1	Jl	24	23	31	23	54	45	6	41	20	103	50	30		
K. 1067 (S. M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	2	Au	22	55	21	...	23	3	8	39	53	133	22	20		
K. 1067 (N. M.)	Purattasi .	5	S	15	30	6	O	14	Asvina ...	4	S	21	27	12	20	58	28	10	38	27	162	54	10		
26 g., 40 p.	Aippasi ...	7	O	15	30	1	N	13	Kartika ...	5	O	20	59	2	...○	40	51	12	37	0	192	26	0		
B. S. 1298	Kartigai .	2	N	14	30	3	D	13	Margasira ...	7	N	19	30	52	...	27	4	14	35	34	221	57	50		
(N.) Krodhin	Margali .	4	D	14	29	4	Ja	11	Pausha ...	2	D	19	2	42	...	16	14	16	34	8	251	29	41		
A. D. 1893	Tai ...	5	Ja	12	30	6	F	10	Magha ...	3	Ja	17	34	32	18	0	25	18	32	41	281	1	31		
H. 1311	Masi ...	7	F	11	29	7	Mr	11	Phalguna ...	5	F	16	6	23	...	38	57	20	31	15	310	33	21		
July 15	Panguni ...	1	Mr	12	31	3	Ap	11	Chaitra ...	6	Mr	17	38	13	18	10	1	22	29	48	340	5	11		
K. Y. 4994	Chittirai ...	4	Ap	12	31	6	My	12	Vaisakha ...	1	Ap	16	10	3	...	34	41	24	28	22	4	21	30	0 day, 19 ghat., 14 palas.	0 „ 36 „ 24 „
Sak. 1815	Vaikasi ...	7	My	13	31	2	Je	12	Jyeshta ...	2	My	15	41	53	...	54	43	26	26	56	33	53	20		
Vik. 1950	Ani ...	3	Je	13	32	6	Jl	14	Ashada ...	4	Je	14	13	43	...	12	5	0	52	13	63	25	10		
										5	Jl	13	45	33	...	29	21	2	50	46	92	57	0		
(S.) Vijaya	Adi ...	7	Jl	15	31	2	Au	14	Sravana ...	7	Au	12	17	23	11	49	21	4	49	20	122	28	50		
K. 1068 (S. M.)	Avani ...	3	Au	15	31	5	S	14	Bhadrapada .	1	S	10	49	13	...	14	34	6	47	54	152	0	40		
K. 1068 (N. M.)	Purattasi .	6	S	15	31	1	O	15	Asvina ...	3	O	10	21	3	9	46	49	8	46	27	181	32	30		
42 g., 11 p.	Aippasi ...	2	O	16	29	2	N	13	Kartika ...	4	N	8	52	53	...	26	54	10	45	1	211	4	20		
B. S. 1299	Kartigai ...	3	N	14	30	4	D	13	Margasira ...	6	D	8	24	44	...	13	42	12	43	34	240	36	10		
(N.) Visvavasu.	Margali ...	5	D	14	29	5	Ja	11	Pausha ...	7	Ja	6	56	34	7	3	43	14	42	8	270	8	1		
A. D. 1894	Tai ...	6	Ja	12	30	7	F	10	Magha ...	2	F	5	28	24	...	51	38	16	40	42	299	39	51		
H. 1312	Masi ...	1	F	11	30	2	Mr	12	Phalguna ...	4	Mr	7	0	14	...○	33	24	18	39	15	329	11	41		
July 5	Panguni ...	3	Mr	13	30	4	Ap	11	Chaitra ...	5	Ap	5	32	4	6●	7	23	20	37	49	358	43	31		
K. Y. 4995	Chittirai ...	5	Ap	12	31	7	My	12	Vaisakha ...	7	My	5	3	54	...	34	3	22	36	22	22	59	50	1 day, 43 ghat., 12 palas.	3 „ 12 „ 4 „
Sak. 1816	Vaikasi ...	1	My	13	31	3	Je	12	Jyeshta ...	1	Je	3	35	44	...	54	59	24	34	56	52	31	40		
Vik. 1951	Ani ...	4	Je	13	32	7	Jl	14	Ashada ...	3	Jl	3	7	34	...	12	31	26	33	30	82	3	30		
(S.) Jaya	Adi ...	4	Jl	15	31	3	Au	14	Sravana ...	4	Au	1	39	24	...	29	17	0	58	47	111	35	20		
K. 1069 (S. M.)	Avani ...	4	Au	15	31	6	S	14	Bhadrapada .	6	Au	31	11	14	30○	48	5	2	57	20	141	7	10		
K. 1069 (N. M.)	Purattasi .	7	S	15	31	2	O	15	Asvina ...	7	S	29	43	4	...●	11	23	4	55	54	170	39	0		
57 g., 42 p.	Aippasi ...	3	O	16	30	4	N	14	Kartika ..	2	O	29	14	55	28	40	47	6	54	27	200	10	50		
B. S. 1300	Kartigai .	5	N	15	29	5	D	13	Margasira ...	3	N	27	46	45	...	17	33	8	52	1	229	42	40		
(N.) Parabhava	Margali ...	6	D	14	30	7	Ja	12	Pausha ...	5	D	27	18	35	...	1	2	10	51	35	259	14	30		
A. D. 1895	Tai ...	1	Ja	13	29	1	F	10	Magha ...	6	Ja	25	50	25	...	49	40	12	50	8	288	46	21		
H. 1313	Masi ...	2	F	11	30	3	Mr	12	Phalguna ...	1	F	24	22	15	...○	38	15	14	48	42	318	18	11		
June 24	Panguni ...	4	Mr	13	30	5	Ap	11	Chaitra ...	2	Mr	25	54	5	26	22	22	16	47	15	347	50	1		

TABLE XII.—General Ephemeris A.D. 1895—A.D. 1900.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning: Week-day	Month	Day	Last Day	Tamil Month End: Week-day	Month	Day	Lunar month.	New Moon, Ending moment of New Moon Tithi, Mean: Week-day	Month	Day (mean)	Ghatikas	Palas	Actual: Day (actual)	Ghatikas	Palas	☾'s Anom.: Day	Ghatikas	Palas	⊙'s Anom.: Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 4996	Chittirai...	6	Ap	12	31	1	My	12	Vaisakha ...	4	Ap	24	25	55	...	59	27	18	45	49	12	6	20	0 day, 54 ghat., 20 palas.	1 „ 41 „ 6 „
Sak, 1817	Vaikasi ...	2	My	13	32	5	Je	13	Jyeshta ...	5	My	23	57	45	24	29	4	20	44	23	41	38	10		
Vik. 1952	Ani ...	6	Je	14	31	1	Jl	14	Ashada ...	7	Je	22	29	36	...	52	36	22	42	56	71	10	0		
(S.) Manmatha.	Adi ...	2	Jl	15	32	5	Au	15	Sravana ...	2	Jl	22	1	26	...	12	8	24	41	30	100	41	50		
K. 1070 (S. M.)	Avani ...	6	Au	16	31	1	S	15	Bhadrapada .	3	Au	20	33	16	●○	30	29	26	40	3	130	13	40		
K. 1070 (N. M.)	Purattasi .	2	S	16	30	3	O	15	Asvina ...	5	S	19	5	6	18	49	51	1	5	20	159	45	30		
13 g., 14 p.	Aippasi ...	4	O	16	30	5	N	14	Kartika ...	6	O	18	36	56	...	12	27	3	3	54	189	17	20		
B. S. 1301	Kartigai ...	6	N	15	30	7	D	14	Margasira ...	1	N	17	8	46	16	39	48	5	2	28	218	49	10		
(N.) Plavanga.	Margali ...	1	D	15	29	1	Ja	12	Pausha ...	2	D	16	40	37	...	13	8	7	1	1	248	21	0		
A. D. 1896	Tai ...	2	Ja	13	29	2	F	10	Magha ...	4	Ja	15	12	27	14	52	22	8	59	35	277	52	51		
H. 1314	Masi ...	3	F	11	30	4	Mr	11	Phalguna ...	5	F	13	44	17	...○	36	19	10	58	8	307	24	41		
June 12	Panguni ...	5	Mr	12	30	6	Ap	10	Chaitra ...	7	Mr	14	16	7	...	22	13	12	56	42	336	56	31		
K. Y. 4997	Chittirai ...	7	Ap	11	31	2	My	11	Vaisakha ...	1	Ap	12	47	57	13	6	31	14	55	16	1	12	50	0 day, 5 ghat., 27 palas.	0 „ 10 „ 8 „
Sak. 1818	Vaikasi ...	3	My	12	32	6	Je	12	Jyeshta ...	3	My	12	19	47	...	45	51	16	53	49	30	44	40		
										4	Je	10	51	37	11	18	59	18	52	23	60	16	30		
Vik. 1953	Ani ...	7	Je	13	31	2	Jl	13	Ashada ...	6	Jl	10	23	27	...	46	21	20	50	56	89	48	20		
(S.) Durmukha	Adi ...	3	Jl	14	32	6	Au	14	Sravana ...	7	Au	8	55	17	9●○	9	53	22	49	30	119	20	10		
K. 1071 (S. M.)	Avani ...	7	Au	15	31	2	S	14	Bhadrapada .	2	S	7	27	7	...	31	35	24	48	4	148	52	0		
K. 1071 (N. M.)	Purattasi .	3	S	15	30	4	O	14	Asvina ...	3	O	6	58	57	...	53	18	26	46	37	178	23	50		
28 g., 45 p.	Aippasi ...	5	O	15	30	6	N	13	Kartika ...	5	N	5	30	48	...	16	35	1	11	54	207	55	40		
B. S. 1302	Kartigai ...	7	N	14	30	1	D	13	Margasira ...	7	D	5	2	38	4	42	14	3	10	28	237	27	30		
(N.) Kilaka	Margali ...	2	D	14	29	2	Ja	11	Pausha ...	1	Ja	3	34	28	...	13	3	5	9	1	266	59	20		
A. D. 1897	Tai ...	3	Ja	12	30	4	F	10	Magha ...	3	F	2	6	18	1	47	22	7	7	35	296	31	11		
H. 1315	Masi ...	5	F	11	29	5	Mr	11	Phalguna ...	4	Mr	3	38	8	...	25	22	9	6	9	326	3	1		
June 2	Panguni ...	6	Mr	12	31	1	Ap	11	Chaitra ...	6	Ap	2	9	58	...	6	4	11	4	42	355	34	51		
K. Y. 4998	Chittirai ...	2	Ap	12	31	4	My	12	Vaisakha ...	7	My	1	41	48	...	46	56	13	3	16	19	51	10	1 day, 29 ghat., 6 palas.	2 „ 45 „ 48 „
Sak. 1819	Vaikasi ...	5	My	13	31	7	Je	12	Jyeshta ...	2	My	31	13	38	...	27	23	15	1	48	49	23	0		
Vik. 1954	Ani ...	1	Je	13	32	4	Jl	14	Ashada ...	3	Je	29	45	29	30	3	39	17	0	22	78	54	50		
(S.) Hemalamba.	Adi ...	5	Jl	15	31	7	Au	14	Sravana ...	5	Jl	29	17	19	...	35	54	18	58	55	108	26	40		
K. 1072 (S. M.)	Avani ...	1	Au	15	31	3	S	14	Bhadrapada .	6	Au	27	49	9	28	4	0	20	57	29	137	58	30		
K. 1072 (N. M.)	Purattasi .	4	S	15	31	6	O	15	Asvina ...	1	S	26	20	59	...	31	29	22	56	2	167	30	20		
44 g., 16 p.	Aippasi ...	7	O	16	30	1	N	14	Kartika ...	2	O	25	52	49	...	56	59	24	54	36	197	2	10		
B. S. 1303	Kartigai ...	2	N	15	29	2	D	13	Margasira ...	4	N	24	24	39	...	22	20	26	53	10	226	34	0		
(N.) Saumya	Margali ...	3	D	14	29	3	Ja	11	Pausha ...	5	D	23	56	29	...○	48	30	1	18	27	256	5	50		
A. D. 1898	Tai ...	4	Ja	12	30	5	F	10	Magha ...	7	Ja	22	28	19	...●	16	14	3	17	0	285	37	40		
H. 1316	Masi ...	6	F	11	30	7	Mr	12	Phalguna ...	2	F	21	0	9	20	45	51	5	15	34	315	9	31		
May 22	Panguni ...	1	Mr	13	30	2	Ap	11	Chaitra ...	3	Mr	22	32	0	...	18	18	7	14	6	344	41	21		
K. Y. 4999	Chittirai ...	3	Ap	12	31	5	My	12	Vaisakha ...	5	Ap	21	3	50	20	50	2	9	12	41	8	57	40	0 day, 40 ghat., 13 palas.	1 „ 14 „ 50 „
Sak. 1820	Vaikasi ...	6	My	13	31	1	Je	12	Jyeshta ...	6	My	20	35	40	...	28	27	11	11	15	38	29	30		
Vik. 1955	Ani ...	2	Je	13	32	5	Jl	14	Ashada ...	1	Je	19	7	30	...○	6	13	13	9	48	68	1	20		
(S.) Vilamba	Adi ...	6	Jl	15	31	1	Au	14	Sravana ...	2	Jl	18	39	20	...	44	14	15	8	22	97	33	10		
K. 1073 (S. M.)	Avani ...	2	Au	15	31	4	S	14	Bhadrapada .	4	Au	17	11	10	...	21	11	17	6	55	127	5	0		
K. 1073 (N. M.)	Purattasi .	5	S	15	31	7	O	15	Asvina ...	5	S	15	43	0	...	56	16	19	5	29	156	36	50		
										7	O	15	14	50	...	27	14	21	4	3	186	8	40		
59 g., 47 p.	Aippasi ...	1	O	16	30	2	N	14	Kartika ...	1	N	13	46	40	...	59	32	23	2	36	215	40	30		
B. S. 1304	Kartigai ...	3	N	15	29	3	D	13	Margasira ...	3	D	13	18	31	...○	28	7	25	1	10	245	12	20		
(N.) Sadharana	Margali ...	4	D	14	30	5	Ja	12	Pausha ...	4	Ja	11	50	21	...	55	15	26	59	43	274	44	10		
A. D. 1899	Tai ...	6	Ja	13	29	6	F	10	Magha ...	6	F	10	22	11	...	21	18	1	25	0	304	16	1		
H. 1317	Masi ...	7	F	11	30	1	Mr	12	Phalguna ...	7	Mr	11	54	1	...	47	4	3	23	34	333	47	51		
May 12	Panguni ...	2	Mr	13	30	3	Ap	11	Chaitra ...	2	Ap	10	25	51	...	13	25	5	22	8	363	19	41		
K. Y. 5000.	Chittirai ...	4	Ap	12	31	6	My	12	Vaisakha ...	3	My	9	57	41	...	41	11	7	20	41	27	36	0	2 days, 3 ghat., 52 palas.	3 „ 50 „ 30 „
Sak. 1821	Vaikasi ...	7	My	13	32	3	Je	13	Jyeshta ...	5	Je	8	29	31	...○	11	54	9	19	15	57	7	50		
Vik. 1956	Ani ...	4	Je	14	31	6	Jl	14	Ashada ...	7	Jl	8	1	21	7	45	42	11	17	48	86	39	40		
(S.) Vikari	Adi ...	7	Jl	15	32	3	Au	15	Sravana ...	1	Au	6	33	12	...	23	11	13	16	22	116	11	80		
K. 1074 (S. M.)	Avani ...	4	Au	16	31	6	S	15	Bhadrapada .	3	S	5	5	2	...	3	24	15	14	56	145	43	20		
K. 1074 (N. M.)	Purattasi .	7	S	16	30	1	O	15	Asvina ...	4	O	4	36	52	...	44	13	17	13	29	175	15	10		
15 g., 19 p.	Aippasi ...	2	O	16	30	3	N	14	Kartika ...	6	N	3	8	42	...	23	28	19	12	3	204	47	0		
B. S. 1305	Kartigai ...	4	N	15	30	5	D	14	Margasira ...	7	D	2	40	32	...○	59	47	21	10	36	234	18	50		
(N.) Virodhakrit.	Margali ...	6	D	15	29	6	Ja	12	Pausha ...	2	Ja	1	12	22	...	32	27	23	9	10	263	50	40		
A. D. 1900	Tai ...	7	Ja	13	29	7	F	10	Magha ...	3	Ja	30	44	12	31	1	20	25	7	44	293	22	30		
H. 1318	Masi ...	1	F	11	30	2	Mr	12	Phalguna ...	5	Mr	1	16	3	...	26	49	27	6	17	322	54	20		
May 1	Panguni ...	3	Mr	13	31	5	Ap	12	Chaitra ...	6	Mr	30	47	53	...	49	50	1	31	34	352	26	10		

Kollam years K add 1.

TABLE XII.—General Ephemeris A.D. 1900—A.D. 1905.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Day (mean)	Ending moment of New Moon Tithi. Mean Ghatikas	Palas	Day (actual)	Actual Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K.Y. 5001	Chittirai...	6	Ap	13	30	7	My	12	Vaisakha ...	1	Ap	29	19	43	...	11	53	3	30	8	16	42	29	1 day, 14 ghat., 59 palas.	2 „ 19 „ 32 „
Sak. 1822	Vaikasi ...	1	My	13	32	4	Je	13	Jyeshta ...	2	My	28	51	33	●○	34	30	5	28	42	46	14	19		
Vik. 1957	Ani ...	5	Je	14	31	7	Jl	14	Ashada ...	4	Je	27	23	23	26	59	31	7	27	15	75	46	9		
(S.) Sarvari	Adi ...	1	Jl	15	32	4	Au	15	Sravana ...	5	Jl	26	55	13	...	28	45	9	25	49	105	18	0		
K. 1075 (S. M.)	Avani ...	5	Au	16	31	7	S	15	Bhadrapada.	7	Au	25	27	3	...	3	49	11	24	22	134	49	50		
K. 1075 (N. M.)	Purattasi .	1	S	16	30	2	O	15	Asvina ...	1	S	23	58	53	...	44	43	13	22	56	164	21	40		
30 g., 50 p.	Aippasi ...	3	O	16	30	4	N	14	Kartika ...	3	O	23	30	43	...	31	30	15	21	30	193	53	30		
B. S. 1306	Kartigai...	5	N	15	30	6	D	14	Margasira ...	5	N	22	2	33	... ●	14	26	17	20	3	223	25	20		
(N.) Paridhavin.	Margali ...	7	D	15	29	7	Ja	12	Pausha ...	6	D	21	34	24	...	56	39	19	18	37	252	57	10		
A. D. 1901	Tai ...	1	Ja	13	30	2	F	11	Magha ...	1	Ja	20	6	14	...	33	54	21	17	10	282	29	0		
H. 1319	Masi ...	3	F	12	29	3	Mr	12	Phalguna ...	2	F	18	38	4	19	5	16	23	15	44	312	0	50		
Ap. 20	Panguni...	4	Mr	13	31	6	Ap	12	Chaitra ...	4	Mr	20	9	54	...	31	13	25	14	18	341	32	40		
K. Y. 5002	Chittriai...	7	Ap	13	31	2	My	13	Vaisakha ...	5	Ap	18	41	44	...	52	54	27	12	51	5	48	59	0 day, 26 ghat., 6 palas.	0 „ 48 „ 35 „
Sak. 1823	Vaikasi ...	3	My	14	31	5	Je	13	Jyeshta ...	7	My	18	13	34	... ●	12	7	1	38	8	35	20	49		
Vik.1958	Ani ...	6	Je	14	32	2	Jl	15	Ashada ...	1	Je	16	45	24	...	29	5	3	36	42	64	52	39		
(S.) Plava.	Adi ...	3	Jl	16	31	5	Au	15	Sravana ...	3	Jl	16	17	14	15	51	40	5	35	15	94	24	29		
										4	Au	14	49	5	...	16	58	7	33	49	123	56	19		
K. 1076 (S. M.)	Avani ...	6	Au	16	31	1	S	15	Bhadrapada.	6	S	13	20	55	12	48	47	9	32	23	153	28	9		
K. 1076 (N. M.)	Purattasi .	2	S	16	31	4	O	16	Asvina ...	7	O	12	52	45	... ○	28	4	11	30	56	183	0	0		
16 g., 21 p.	Aippasi ...	5	O	17	30	6	N	15	Kartika ...	2	N	11	24	35	... ●	13	38	13	29	30	212	31	50		
B. S. 1307.	Kartigai...	7	N	16	29	7	D	14	Margasira .	3	D	10	56	25	11	2	24	15	28	3	242	3	40		
(N.) Pramadin	Margali ...	1	D	15	29	1	Ja	12	Pausha ...	5	Ja	9	28	15	...	49	17	17	26	37	271	35	30		
A. D. 1902	Tai ...	2	Ja	13	30	3	F	11	Magha ...	7	F	8	0	5	...	31	6	19	25	11	301	7	20		
H. 1320	Masi ...	4	F	12	30	5	Mr	13	Phalguna ...	1	Mr	9	31	55	10	5	34	21	23	44	330	39	10		
Ap. 10.	Panguni ...	6	Mr	14	30	7	Ap	12	Chaitra ...	3	Ap	8	3	45	... ○	33	3	23	22	18	360	11	0		
K. Y. 5003	Chittirai ...	1	Ap	13	31	3	My	13	Vaisakha ...	4	My	7	35	36	...	54	54	25	20	51	24	27	19	1 day, 49 ghat., 46 palas.	3 „ 24 „ 14 „
Sak. 1824	Vaikasi ...	4	My	14	31	6	Je	13	Jyeshta ...	6	Je	6	7	26	...	13	1	27	19	25	53	59	9		
Vik. 1959.	Ani ...	7	Je	14	32	3	Jl	15	Ashada ...	7	Jl	5	39	16	...	29	48	1	44	42	83	30	59		
(S.) Subhakrit	Adi ...	4	Jl	16	31	6	Au	15	Sravana ...	2	Au	4	11	6	3	48	8	3	43	16	113	2	50		
K. 1077 (S. M.)	Avani ...	7	Au	16	31	2	S	15	Bhadrapada.	3	S	2	42	56	...	10	31	5	41	49	142	34	40		
K. 1077 (N. M.)	Purattasi .	3	S	16	31	5	O	16	Asvina ...	5	O	2	14	46	1 ○	39	18	7	40	23	172	6	30		
1 g., 52 p.	Aippasi ...	6	O	17	30	7	N	15	Kartika ...	6	O	31	45	36	●	16	38	9	38	56	201	38	20		
B. S. 1308	Kartigai ...	1	N	16	29	1	D	14	Margasira ...	1	N	30	18	26	29	59	33	11	37	30	231	10	10		
(N.) Ananda	Margali ...	2	D	15	30	3	Ja	13	Pausha ...	2	D	29	50	16	...	48	38	13	36	4	260	42	0		
A. D. 1903	Tai ...	4	Ja	14	29	4	F	11	Magha ...	4	Ja	28	22	7	...	38	15	15	34	37	290	13	50		
H. 1321	Masi ...	5	F	12	30	6	Mr	13	Phalguna ...	5	F	26	53	57	27	23	18	17	33	11	319	45	40		
Mr. 30	Panguni...	7	Mr	14	30	1	Ap	12	Chaitra ...	7	Mr	28	25	47	29 ●○	1	2	19	31	44	349	17	30		
K. Y. 5004	Chittirai...	2	Ap	13	31	4	My	13	Vaisakha ...	1	Ap	26	57	37	27	31	3	21	30	18	13	33	49	1 day, 0 ghat., 53 palas.	1 „ 53 „ 17 „
Sak. 1825	Vaikasi ...	5	My	14	32	1	Je	14	Jyeshta ...	3	My	26	29	27	...	54	27	23	28	52	43	5	39		
Vik. 1960	Ani ...	2	Je	15	31	4	Jl	15	Ashada ...	5	Je	25	1	17	...	13	17	25	27	25	72	37	29		
(S.) Sobhakrit	Adi ...	5	Jl	16	32	1	Au	16	Sravana ...	6	Jl	24	33	7	...	30	9	27	25	59	102	9	19		
K. 1078 (S. M.)	Avani ...	2	Au	17	31	4	S	16	Bhadrapada .	1	Au	23	4	57	22	47	52	1	51	16	131	41	9		
K. 1078 (N. M.)	Purattasi .	5	S	17	30	6	O	16	Asvina ...	2	S	21	36	48	●○	8	56	3	49	49	161	12	59		
17 g., 24 p.	Aippasi ...	7	O	17	30	1	N	15	Kartika ...	4	O	21	8	38	20	35	17	5	48	23	190	44	50		
B. S. 1309	Kartigai...	2	N	16	30	3	D	15	Margasira ...	5	N	19	40	28	...	8	30	7	46	57	220	16	40		
(N.) Rakshasa	Margali ...	4	D	16	29	4	Ja	13	Pausha ...	7	D	19	12	18	18	48	54	9	45	30	249	48	30		
A. D. 1904	Tai ...	5	Ja	14	29	5	F	11	Magha ...	1	Ja	17	44	8	...	35	13	11	44	4	279	20	20		
H. 1322	Masi ...	6	F	12	30	7	Mr	12	Phalguna ...	3	F	16	15	58	...	23	59	13	42	37	308	52	10		
Mr. 18	Panguni...	1	Mr	13	31	3	Ap	12	Chaitra ...	4	Mr	16	47	48	17 ●	10	28	15	41	11	338	24	0		
K. Y. 5005	Chittirai...	4	Ap	13	30	5	My	12	Vaisakha ...	6	Ap	15	19	38	...	50	57	17	39	45	2	40	19	0 day, 12 ghat., 0 palas.	0 „ 22 „ 19 „
Sak. 1826	Vaikasi ...	6	My	13	32	2	Je	13	Jyeshta ...	7	My	14	51	28	15	24	6	19	38	18	32	12	9		
										2	Je	13	23	19	...	50	25	21	36	52	61	43	59		
Vik. 1961	Ani ...	3	Je	14	31	5	Jl	14	Ashada ...	3	Jl	12	55	9	13	11	46	23	35	25	91	15	49		
(S.) Krodhi	Adi ...	6	Jl	15	32	2	Au	15	Sravana ...	5	Au	11	26	59	...	30	47	25	33	59	120	47	39		
K. 1079 (S. M.)	Avani ...	3	Au	16	31	5	S	15	Bhadrapada.	6	S	9	58	49	...	49	42	27	32	33	150	19	29		
K. 1079 (N. M.)	Purattasi .	6	S	16	30	7	O	15	Asvina ...	1	O	9	30	39	...	10	56	1	57	50	179	51	19		
32g., 55 p.	Aippasi ...	1	O	16	30	2	N	14	Kartika ...	3	N	8	2	29	7	36	0	3	56	23	209	23	10		
B. S. 1310	Kartigai ...	3	N	15	30	4	D	14	Margasira ...	4	D	7	34	19	...	6	21	5	54	50	238	55	0		
(N.) Anala	Margali ...	5	D	15	29	5	Ja	12	Pausha ...	6	Ja	6	6	9	5	42	34	7	53	30	268	26	50		
A. D. 1905	Tai ...	6	Ja	13	30	7	F	11	Magha ...	7	F	4	37	59	○	24	1	9	52	4	297	58	40		
H. 1323	Masi ...	1	F	12	29	1	Mr	12	Phalguna ...	2	Mr	6	9	50	...	8	45	11	50	38	327	30	30		
Mr. 8	Panguni ...	2	Mr	13	31	4	Ap	12	Chaitra ...	3	Ap	4	41	40	...	52	44	13	49	11	357	2	20		

TABLE XII.—General Ephemeris A.D. 1905—A.D. 1910.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar Month.	New Moon Week-day	Month	Ending moment of New Moon Tithi. Mean Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	☉'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 5006	Chittirai...	5	Ap	13	31	7	My	13	Vaisakha ...	5	My	4	13	30	...	37	5	15	47	45	21	18	39	1 day, 35 ghat., 39 palas.	2 „ 57 „ 59 „
Sak. 1827	Vaikasi ...	1	My	14	31	3	Je	13	Jyeshta ...	6	Je	2	45	20	3	11	37	17	46	18	50	50	29		
Vik. 1962	Ani ...	4	Je	14	32	7	Jl	15	Ashada ...	1	Jl	2	17	10	...	41	50	19	44	52	80	22	19		
(S.) Visvavasu	Adi ...	1	Jl	16	31	3	Au	15	Sravana ...	2	Jl	31	49	0	Au.1○	7	28	21	43	26	109	54	9		
K. 1080 (S.M.)	Avani ...	4	Au	16	31	6	S	15	Bhadrapada .	4	Au	30	20	50	...●	30	22	23	41	59	139	25	59		
K. 1080 (N.M.)	Purattasi .	7	S	16	31	2	O	16	Asvina ...	5	S	28	52	40	...	52	27	25	40	33	168	57	49		
40 g., 26 p.	Aippasi ...	3	O	17	30	4	N	15	Kartika ...	7	O	28	24	31	...	14	...	0	5	50	198	29	39		
B. S. 1311	Kartigai ...	5	N	16	29	5	D	14	Margasira ...	1	N	26	56	21	...	40	11	2	4	24	228	1	29		
(N.) Pingala	Margali ...	6	D	15	29	6	Ja	12	Pausha ...	3	D	26	28	11	...	8	24	4	2	57	257	33	20		
A. D. 1906	Tai ...	7	Ja	13	30	1	F	11	Magha ...	5	Ja	25	0	1	24○	40	22	6	1	31	287	5	10		
H. 1324	Masi ...	2	F	12	30	3	Mr	13	Phalguna ...	6	F	23	31	51	...	16	3	8	0	4	316	36	59		
Feb. 25	Panguni ...	4	Mr	14	30	5	Ap	12	Chaitra ...	1	Mr	25	3	41	24	54	53	9	58	38	346	8	49		
K. Y. 5007	Chittirai...	6	Ap	13	31	1	My	13	Vaisakha ...	2	Ap	23	35	31	...	35	31	11	57	12	10	25	8	0 day, 46 ghat., 46 palas.	1 „ 27 „ 1 „
Sak. 1828	Vaikasi ...	2	My	14	31	4	Je	13	Jyeshta ..	4	My	23	7	21	...	14	55	13	55	45	39	56	59		
Vik. 1963	Ani ...	5	Je	14	32	1	Jl	15	Ashada ...	5	Je	21	39	12	...	54	3	15	54	19	69	28	49		
(S.) Parabhava	Adi ...	2	Jl	16	31	4	Au	15	Sravana ...	7	Jl	21	11	2	...○	28	30	17	52	52	99	0	39		
K. 1081 (S.M.)	Avani ...	5	Au	16	32	1	S	16	Bhadrapada .	1	Au	19	42	52	...●	59	34	19	51	26	128	32	29		
K. 1081 (N.M.)	Purattasi	2	S	17	30	3	O	16	Asvina ...	3	S	18	14	42	...	27	57	21	50	0	158	4	19		
3 g., 58 p.	Aippasi ...	4	O	17	30	5	N	15	Kartika ...	4	O	17	46	32	...	54	33	23	48	33	187	36	9		
B. S. 1312	Kartigai ...	6	N	16	29	6	D	14	Margasira ...	6	N	16	18	22	...	20	23	25	47	7	217	7	59		
(N.) Kalayukta	Margali ...	7	D	15	30	1	Ja	13	Pausha ...	7	D	15	50	12	...	46	19	0	12	24	246	39	49		
A. D. 1907	Tai	2	Ja	14	29	2	F	11	Magha ...	2	Ja	14	22	2	..●○	13	13	2	10	57	276	11	39		
H. 1325	Masi ...	3	F	12	30	4	Mr	13	Phalguna ...	3	F	12	53	52	...	41	30	4	9	31	305	43	29		
Feb. 14	Panguni...	5	Mr	14	30	6	Ap	12	Chaitra ...	5	Mr	14	25	43	...	11	37	6	8	5	335	15	19		
										6	Ap	12	57	33	...	43	55	8	6	38	364	47	10		
K. Y. 5008	Chittirai..	7	Ap	13	31	2	My	13	Vaisakha ...	1	My	12	29	23	...	18	35	10	5	12	29	3	29	2 days, 10 ghat., 25 palas.	4 „ 2 „ 41 „
Sak. 1829	Vaikasi ...	3	My	14	32	6	Je	14	Jyeshta ...	3	Je	11	1	13	10	55	14	12	3	45	58	35	19		
Vik. 1964	Ani ...	7	Je	15	31	2	Jl	15	Ashada ...	4	Jl	10	33	3	...○	33	7	14	2	19	88	7	9		
(S.) Plavanga	Adi ...	3	Jl	16	32	6	Au	16	Sravana ...	6	Au	9	4	53	...	11	2	16	0	53	117	38	59		
K. 1082 (S.M.)	Avani ...	7	Au	17	31	2	S	16	Bhadrapada .	7	S	7	36	43	...	47	49	17	59	26	147	10	49		
K. 1082 (N.M.)	Purattasi .	3	S	17	30	4	O	16	Asvina ...	2	O	7	8	34	...	22	34	19	58	0	176	42	39		
19 g., 29 p.	Aippasi ...	5	O	17	30	6	N	15	Kartika ...	3	N	5	40	24	...	54	54	21	56	33	206	14	29		
B. S. 1313	Kartigai...	7	N	16	30	1	D	15	Margasira ...	5	D	5	12	14	...	24	54	23	55	7	235	46	19		
(N.) Siddharthin.	Margali ...	2	D	16	29	2	Ja	13	Pausha ...	6	Ja	3	44	4	...	53	36	25	53	40	265	18	9		
A. D. 1908	Tai ...	3	Ja	14	29	3	F	11	Magha ...	1	F	2	15	54	...	19	22	0	18	58	294	49	59		
H. 1326	Masi ...	4	F	12	30	5	Mr	12	Phalguna ...	2	Mr	2	47	44	...	44	47	2	17	31	324	21	50		
Feb. 4	Panguni ...	6	Mr	13	31	1	Ap	12	Chaitra ...	4	Ap	1	19	34	...	10	9	4	16	5	353	53	40		
K. Y. 5009	Chittirai...	2	Ap	13	31	4	My	13	Vaisakha ...	5	Ap	30	51	24	...	36	8	6	14	38	18	9	59	1 day, 21 ghat., 32 palas.	2 „ 31 „ 43 „
Sak. 1830	Vaikasi ...	5	My	14	31	7	Je	13	Jyeshta ...	7	My	30	23	14	...	4	55	8	13	12	47	41	49		
Vik. 1965	Ani ...	1	Je	14	32	4	Jl	15	Ashada ...	1	Je	28	55	4	...●	36	30	10	11	46	77	13	39		
(S.) Kilaka	Adi ...	5	Jl	16	31	7	Au	15	Sravana ...	3	Jl	28	26	55	...	12	3	12	10	19	106	45	29		
K. 1083 (S.M.)	Avani ...	1	Au	16	31	3	S	15	Bhadrapada .	4	Au	26	58	45	...	51	21	14	8	53	136	17	19		
K. 1083 (N.M.)	Purattasi	4	S	16	30	5	O	15	Asvina ...	6	S	25	30	35	...	32	46	16	7	26	165	49	9		
50 g., 31 p.	Aippasi ...	6	O	16	30	7	N	14	Kartika ...	1	O	25	2	25	...	13	46	18	6	0	195	20	59		
B. S. 1314	Kartigai ...	1	N	15	30	2	D	14	Margasira ...	2	N	23	34	15	...	52	21	20	4	34	224	52	49		
(N.) Raudra	Margali ...	3	D	15	29	3	Ja	12	Pausha ...	4	D	23	6	5	...●	27	26	22	3	7	254	24	39		
A. D. 1909	Tai ...	4	Ja	13	30	5	F	11	Magha ...	5	Ja	21	37	55	...	58	20	24	1	41	283	56	29		
H. 1327	Masi ...	6	F	12	30	7	Mr	13	Phalguna ...	7	F	20	9	45	...	25	11	26	0	14	313	28	20		
Ja. 23	Panguni...	1	Mr	14	30	2	Ap	12	Chaitra ...	1	Mr	21	41	36	...	48	57	0	25	31	343	0	10		
K. Y. 5010	Chittirai...	3	Ap	13	31	5	My	13	Vaisakha ...	3	Ap	20	13	26	...	10	48	2	24	5	7	16	29	0 day, 32 ghat., 39 palas..	1 „ 0 „ 45 „
Sak. 1831	Vaikasi ...	6	My	14	31	1	Je	13	Jyeshta ...	4	My	19	45	16	...○	32	18	4	22	39	36	48	19		
Vik. 1966	Ani ...	2	Je	14	32	5	Jl	15	Ashada ...	6	Je	18	17	6	17●	55	23	6	21	12	66	20	9		
(S.) Saumya	Adi ...	6	Jl	16	31	1	Au	15	Sravana ...	7	Jl	17	48	56	...	21	55	8	19	45	95	51	59		
										2	Au	16	20	46	15	53	57	10	18	19	125	23	49		
K. 1084 (S.M.)	Avani ...	2	Au	16	31	4	S	15	Bhadrapada .	3	S	14	52	36	...	32	6	12	16	53	154	55	39		
K. 1084 (N.M.)	Purattasi	5	S	16	31	7	O	16	Asvina ...	5	O	14	24	26	...	15	54	14	15	27	184	27	29		
35 g., 0 p.	Aippasi ...	1	O	17	30	2	N	15	Kartika ...	6	N	12	56	17	13○	1	50	16	14	0	213	59	19		
B. S. 1315	Kartigai ...	3	N	16	29	3	D	14	Margasira ...	1	D	12	28	7	...	46	22	18	12	34	243	31	9		
(N.) Durmati	Margali ...	4	D	15	29	4	Ja	12	Pausha ...	3	Ja	11	0	0	...	25	37	20	11	7	273	2	59		
A. D. 1910	Tai ...	5	Ja	13	30	6	F	11	Magha ...	4	F	9	31	47	10	1	12	22	9	41	302	34	50		
H. 1328	Masi ...	7	F	12	30	1	Mr	13	Phalguna ...	6	Mr	11	3	37	...	29	19	24	8	15	332	6	40		
Ja. 13	Panguni...	2	Mr	14	30	3	Ap	12	Chaitra ...	7	Ap	9	35	27	...	52	37	26	6	48	361	38	30		

Kollam years K add 1

TABLE XII.—General Ephemeris A.D. 1910—A.D. 1915.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	Tamil Month End Week-day	Month	Day	Lunar month.	New Moon Week-day	Month	Ending moment of New Moon Tithi, Mean: Day (mean)	Ghatikas	Palas	Actual: Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	⊙'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 5011	Chittirai...	4	Ap	13	31	6	My	13	Vaisakha ...	2	My	9	7	17	...○	12	24	0	32	6	25	54	48	1 day, 56 ghat., 18 palas.	3 ,, 36 ,, 25 ,,
Sak. 1832	Vaikasi ...	7	My	14	31	2	Je	13	Jyeshta ...	3	Je	7	39	7	...	30	45	2	30	40	55	26	38		
Vik. 1967	Ani ...	3	Je	14	32	6	Jl	15	Ashada ...	5	Jl	7	10	57	6	49	55	4	29	13	84	58	29		
(S.)Sadharana.	Adi ...	7	Jl	16	32	3	Au	16	Sravana ...	6	Au	5	42	47	...	12	30	6	27	47	114	30	19		
K. 1085 (S.M.)	Avani ...	4	Au	17	31	6	S	16	Bhadrapada.	1	S	4	14	38	3	40	56	8	26	20	144	2	9		
K. 1085 (N. M)	Purattasi .	7	S	17	30	1	O	16	Asvina ...	2	O	3	46	28	...	16	42	10	24	54	173	33	59		
6 g., 3 p.	Aippasi ...	2	O	17	30	3	N	15	Kartika ...	4	N	2	18	18	1●○	59	42	12	23	28	203	5	49		
B. S. 1316	Kartigai .	4	N	16	29	4	D	14	Margasira .	5	D	1	50	8	...	47	48	14	22	1	232	37	39		
(N.) Dundubhi	Margali ...	5	D	15	30	6	Ja	13	Pausha ...	7	D	31	21	58	...	36	35	16	20	35	262	9	29		
A.D. 1911	Tai ...	7	Ja	14	29	7	F	11	Magha ...	1	Ja	29	53	48	30	21	25	18	19	8	291	41	19		
H. 1329. Ja. 2	Masi ...	1	F	12	30	2	Mr	13	Phalguna ...	3	F	28	25	38	...	59	27	20	17	41	321	13	9		
H. 1330. D, 22	Panguni ...	3	Mr	14	30	4	Ap	12	Chaitra ...	4	Mr	29	57	29	30	30	8	22	16	16	350	45	0		
K. Y. 5012	Chittirai...	5	Ap	13	31	7	My	13	Vaisakha ...	6	Ap	28	29	19	...	54	20	24	14	49	15	1	18	1 day, 7 ghat., 25 palas.	2 ,, 5 ,, 27 ,,
Sak. 1833	Vaikasi ...	1	My	14	32	4	Je	14	Jyeshta ...	1	My	28	1	9	...	13	46	26	13	23	44	33	8		
Vik. 1968	Ani ...	5	Je	15	31	7	Jl	15	Ashada ...	2	Je	26	32	59	...	30	43	0	38	40	74	4	59		
(S). Virodhakrit.	Adi ...	1	Jl	16	32	4	Au	16	Sravana ...	4	Jl	26	4	49	25	47	44	2	37	13	103	36	49		
K. 1086 (S.M.)	Avani ...	5	Au	17	31	7	S	16	Bhadrapada.	5	Au	24	36	39	...	8	4	4	35	47	133	8	39		
K. 1086 (N.M.)	Purattasi .	1	S	17	30	2	O	16	Asvina ...	7	S	23	8	29	22	33	35	6	34	21	162	40	29		
21 g., 34 p.	Aippasi ...	3	O	17	30	4	N	15	Kartika ...	1	O	22	40	19	...●	6	13	8	32	54	192	12	19		
B. S. 1317	Kartigai...	5	N	16	30	6	D	15	Margasira ...	3	N	21	12	9	20	46	41	10	31	28	221	44	9		
(N.) Rudhirodgarin	Margali ...	7	D	16	29	7	Ja	13	Pausha ...	4	D	20	44	0	...	33	38	12	30	1	251	15	59		
A. D. 1912	Tai ...	1	Ja	14	29	1	F	11	Magha ...	6	Ja	19	15	50	...	23	46	14	28	35	280	47	49		
H. 1331	Masi ...	2	F	12	30	3	Mr	12	Phalguna ...	7	F	17	47	40	18	11	26	16	27	9	310	19	39		
Dec. 11	Panguni .	4	Mr	13	31	6	Ap	12	Chaitra ...	2	Mr	18	19	30	...○	52	52	18	25	41	339	51	30		
K. Y. 5013	Chittirai...	7	Ap	13	31	2	My	13	Vaisakha ...	3	Ap	16	51	20	17●	26	26	20	24	16	4	7	48	0 day, 18 ghat., 32 palas.	0 ,, 34 ,, 30 ,,
Sak. 1834	Vaikasi ...	3	My	14	31	5	Je	13	Jyeshta ...	5	My	16	23	10	...	52	47	22	22	49	33	39	38		
Vik. 1969	Ani ...	6	Je	14	31	1	Jl	14	Ashada ...	6	Je	14	55	0	15	13	34	24	21	22	63	11	28		
										1	Jl	14	26	50	...	30	21	26	19	57	92	43	18		
(S.)Paridhavi.	Adi ...	2	Jl	15	32	5	Au	15	Sravana ...	2	Au	12	58	40	...	48	15	0	45	14	122	15	9		
K. 1087 (S.M.)	Avani ...	6	Au	16	31	1	S	15	Bhadrapada.	4	S	11	30	31	...○	7	41	2	43	46	151	46	59		
K. 1087 (N.M.)	Purattasi .	2	S	16	31	4	O	16	Asvina ...	6	O	11	2	21	10●	31	26	4	42	21	181	18	49		
37 g., 5 p.	Aippasi ...	5	O	17	29	5	N	14	Kartika ...	7	N	9	34	11	...	1	16	6	40	54	210	50	39		
B. S. 1318	Kartigai .	6	N	15	30	7	D	14	Margasira ...	2	D	9	6	1	8	38	10	8	39	27	240	22	29		
(N.) Raktaksha	Margali ...	1	D	15	29	1	Ja	12	Pausha ...	3	Ja	7	37	51	...	21	44	10	38	1	269	54	19		
A. D. 1913	Tai ...	2	Ja	13	30	3	F	11	Magha ...	5	F	6	9	41	...	9	26	12	36	35	299	26	9		
H. 1332	Masi ...	4	F	12	30	5	Mr	13	Phalguna ...	6	Mr	7	41	31	...○	57	14	14	35	9	328	57	59		
Nov. 30	Panguni ...	6	Mr	14	30	7	Ap	12	Chaitra ...	1	Ap	6	13	21	...	40	42	16	33	43	358	29	50		
K. Y. 5014	Chittirai .	1	Ap	13	32	3	My	13	Vaisakha ...	2	My	5	45	12	6	17	22	18	32	16	22	46	8	1 day, 42 ghat., 11 palas.	3 ,, 10 ,, 9 ,,
Sak. 1835	Vaikasi ...	4	My	14	31	6	Je	13	Jyeshta ...	4	Je	4	17	2	...	46	50	20	30	50	52	17	58		
Vik. 1970	Ani ...	7	Je	14	32	3	Jl	15	Ashada ...	5	Jl	3	48	52	4	10	32	22	29	23	81	49	48		
(S.) Pramadi	Adi ...	4	Jl	16	31	6	Au	15	Sravana ..	7	Au	2	20	42	...	30	42	24	27	57	111	21	39		
K. 1088 (S.M.)	Avani ...	7	Au	16	31	2	S	15	Bhadrapada.	1	Au	31	52	32	...○	49	51	26	26	30	140	53	29		
K. 1088 (N.M.)	Purattasi .	3	S	16	30	4	O	15	Asvina ...	3	S	30	24	22	...	10	6	0	51	48	170	25	19		
52 g., 37 p.	Aippasi ...	5	O	16	31	7	N	15	Kartika ...	4	O	29	56	12	...	33	22	2	50	21	199	57	9		
B. S. 1319	Kartigai ...	1	N	16	29	1	D	14	Margasira ...	6	N	28	28	2	...	1	10	4	48	55	229	28	59		
(N.) Krodhana	Margali ...	2	D	15	30	3	Ja	13	Pausha ...	1	D	28	0	0	27	34	26	6	47	28	259	0	49		
A. D. 1914.	Tai ...	4	Ja	14	29	4	F	11	Magha ...	2	Ja	26	31	43	...	13	5	8	46	2	288	32	39		
H. 1333	Masi ...	5	F	12	31	6	Mr	13	Phalguna ...	4	F	25	3	33	24○	55	55	10	44	35	318	4	29		
Nov. 19.	Panguni ...	7	Mr	14	30	1	Ap	12	Chaitra ...	5	Mr	26	35	23	...	40	32	12	43	9	347	36	20		
K. Y. 5015.	Chittirai .	2	Ap	13	31	4	My	13	Vaisakha ...	7	Ap	25	7	13	...	23	49	14	41	42	11	52	38	0 day, 53 ghat., 18 palas.	1 ,, 39 ,, 11 ,,
Sak. 1836	Vaikasi ...	5	My	14	31	7	Je	13	Jyeshta ...	1	My	24	39	3	25	2	39	16	40	16	41	24	28		
Vik. 1971	Ani ...	1	Je	14	32	4	Jl	15	Ashada ...	3	Je	23	10	53	...	35	50	18	38	50	70	56	18		
(S.) Ananda	Adi ...	5	Jl	16	32	1	Au	16	Sravana ...	4	Jl	22	42	43	23	3	48	20	37	24	100	28	8		
K. 1089 (S. M.)	Avani ...	2	Au	17	31	4	S	16	Bhadrapada.	6	Au	21	14	33	...●○	28	24	22	35	57	129	59	58		
K. 1089 (N. M.)	Purattasi .	5	S	17	30	6	O	16	Asvina ...	7	S	19	46	23	...	51	17	24	34	31	159	31	48		
8 g., 8 p.	Aippasi ...	7	O	17	30	1	N	15	Kartika ...	2	O	19	18	13	...	14	3	26	33	4	189	3	38		
B. S. 1320	Kartigai ...	2	N	16	29	2	D	14	Margasira ...	3	N	17	50	4	...	38	10	0	58	21	218	35	28		
(N.) Kshaya	Margali ...	3	D	15	30	4	Ja	13	Pausha ...	5	D	17	21	54	...	4	49	2	56	55	248	7	19		
A. D. 1915	Tai ...	5	Ja	14	29	5	F	11	Magha ...	6	Ja	15	53	44	...	34	47	4	55	29	277	39	9		
H. 1334	Masi ...	6	F	12	30	7	Mr	13	Phalguna ...	1	F	14	25	34	...●	8	13	6	54	2	307	10	59		
Nov. 9.	Panguni ...	1	Mr	14	30	2	Ap	12	Chaitra ...	2	Mr	15	57	24	...	44	51	8	52	36	336	42	49		

TABLE XII.—General Ephemeris A.D. 1915—A.D. 1920.

Commencement of years in different eras.	Tamil month.	Tamil Month Beginning Week-day	Month	Day	Last Day	End Week-day	Month	Day	Lunar Month.	New Moon Ending moment of New moon Tithi. Week-day	Month	Mean Day (mean)	Ghatikas	Palas	Actual Day (actual)	Ghatikas	Palas	☾'s Anom. Day	Ghatikas	Palas	⊙'s Anom. Day	Ghatikas	Palas	Deduct for Nakshatras	Deduct for Yogas.
K. Y. 5016	Chittirai .	3	Ap	13	31	5	My	13	Vaisakha ...	4	Ap	14	29	14	...	24	1	10	51	9	0	59	8	0 day, 4 ghat, 25 palas.	0 „ 8 „ 14 „
										6	My	14	1	4	...	4	11	12	49	43	30	30	58		
Sak. 1837	Vaikasi ...	6	My	14	32	2	Je	14	Jyeshta ...	7	Je	12	32	54	...	43	23	14	48	17	60	2	48		
Vik. 1972	Ani ...	3	Je	15	31	5	Jl	15	Ashada ...	2	Jl	12	4	44	...	19	47	16	46	50	89	34	38		
(S.) Rakshasa.	Adi ...	6	Jl	16	32	2	Au	16	Sravana ...	3	Au	10	36	34	... ●	53	0	18	45	24	119	6	28		
K. 1090 (S.M.)	Avani ...	3	Au	17	31	5	S	16	Bhadrapada .	5	S	9	8	25	...	23	16	20	43	57	148	38	18		
K. 1090 (N.M.)	Purattasi...	6	S	17	30	7	O	16	Asvina ...	6	O	8	40	15	...	51	24	22	42	31	178	10	8		
23 g., 39 p.	Aippasi ...	1	O	17	30	2	N	15	Kartika ...	1	N	7	12	5	...	18	6	24	41	5	207	41	59		
B. S. 1321.	Kartigai ...	3	N	16	30	4	D	15	Margasira ...	2	D	6	43	55	...	44	18	26	39	38	237	13	49		
(N.) Prabhava.	Margali ...	5	D	16	29	5	Ja	13	Pausha ...	4	Ja	5	15	45	... ○	10	44	1	4	55	266	45	39		
A. D. 1916	Tai ...	6	Ja	14	30	7	F	12	Magha ...	5	F	3	47	35	... ●	38	3	3	3	29	296	17	29		
H. 1335.	Masi ...	1	F	13	29	1	Mr	12	Phalguna ...	7	Mr	4	19	25	...	6	40	5	2	2	325	49	19		
Oct. 28.	Panguni ...	2	Mr	13	31	4	Ap	12	Chaitra ...	1	Ap	2	51	15	...	37	9	7	0	36	355	21	9		
K. Y. 5017	Chittirai...	5	Ap	13	31	7	My	13	Vaisakha ...	3	My	2	23	6	...	9	52	8	59	10	19	37	28	1 day, 28 ghat., 5 palas.	2 „ 43 „ 53 „
Sak. 1838	Vaikasi ...	1	My	14	31	3	Je	13	Jyeshta ...	4	My	31	54	56	...	44	55	10	57	43	49	9	18		
Vik. 1973	Ani ...	4	Je	14	32	7	Jl	15	Ashada ...	6	Je	30	26	46	... ○	21	56	12	56	17	78	41	8		
(S.) Anala.	Adi ...	1	Jl	16	31	3	Au	15	Sravana ...	7	Jl	29	58	36	30	0	9	14	54	50	108	12	58		
K. 1091 (S. M.)	Avani ...	4	Au	16	31	6	S	15	Bhadrapada .	2	Au	28	30	26	...	38	11	16	53	24	137	44	48		
K. 1091 (N. M.)	Purattasi...	7	S	16	31	2	O	16	Asvina ...	4	S	27	2	16	...	14	46	18	51	58	167	16	38		
39 g., 10 p.	Aippasi ...	3	O	17	29	3	N	14	Kartika ...	5	O	26	34	6	...	49	3	20	50	31	196	48	29		
B. S. 1322	Kartigai...	4	N	15	30	5	D	14	Margasira ...	7	N	25	5	56	...	20	50	22	49	5	226	20	19		
(N.) Vibhava	Margali ...	6	D	15	29	6	Ja	12	Pausha ...	1	D	24	37	47	... ○	50	12	24	47	38	255	52	9		
A. D. 1917	Tai ..	7	Ja	13	30	1	F	11	Magha ...	3	Ja	23	9	37	... ●	17	25	26	46	12	285	23	59		
H. 1336	Masi ...	2	F	12	30	3	Mr	13	Phalguna ...	4	F	21	41	27	...	42	56	1	11	29	314	55	49		
Oct. 17	Panguni ...	4	Mr	14	30	5	Ap	12	Chaitra ...	6	Mr	23	13	17	...	7	41	3	10	2	344	27	39		
K. Y. 5018	Chittirai...	6	Ap	13	31	1	My	13	Vaisakha ...	7	Ap	21	45	7	...	32	45	5	8	36	8	43	58	0 day, 39 ghat., 12 palas.	1 „ 12 „ 56 „
Sak. 1839	Vaikasi ...	2	My	14	31	4	Je	13	Jyeshta ...	2	My	21	16	57	20	59	19	7	7	10	38	15	48		
Vik. 1974	Ani ...	5	Je	14	32	1	Jl	15	Ashada ...	3	Je	19	48	47	●○	28	35	9	5	43	67	47	38		
(S.) Pingala	Adi ...	2	Jl	16	31	4	Au	15	Sravana ...	5	Jl	19	20	37	...	1	47	11	4	17	97	19	28		
K. 1092 (S.M.)	Avani ...	5	Au	16	31	7	S	15	Bhadrapada .	6	Au	17	52	28	...	39	26	13	2	51	126	51	18		
										1	S	16	24	18	...	20	36	15	1	24	156	23	8		
K. 1092 (N.M.)	Purattasi...	1	S	16	31	3	O	16	Asvina ...	2	O	15	56	8	16	2	48	16	59	58	185	54	58		
54 g., 41 p.	Aippasi ...	4	O	17	30	5	N	15	Kartika ...	4	N	14	27	58	...	43	34	18	58	31	215	26	49		
B. S. 1323	Kartigai...	6	N	16	29	6	D	14	Margasira ...	6	D	14	0	0	... ○	21	2	20	57	5	244	58	39		
(N.) Sukla.	Margali ...	7	D	15	30	1	Ja	13	Pausha ...	7	Ja	12	31	38	...	54	20	22	55	39	274	30	29		
A. D. 1918	Tai ...	2	Ja	14	29	2	F	11	Magha ...	2	F	11	3	28	...	23	7	24	54	12	304	2	19		
H. 1337.	Masi ...	3	F	12	30	4	Mr	13	Phalguna ...	3	Mr	12	35	18	...	48	1	26	52	45	333	34	9		
Oct. 7.	Panguni ...	5	Mr	14	30	6	Ap	12	Chaitra ...	5	Ap	11	7	8	...	10	56	1	18	3	363	5	59		
K. Y. 5019	Chittirai...	7	Ap	13	31	2	My	13	Vaisakha ...	6	My	10	38	59	...	31	4	3	16	36	27	22	18	2 days, 2 ghat., 51 palas.	3 „ 48 „ 35 „
Sak. 1840	Vaikasi ...	3	My	14	31	5	Je	13	Jyeshta ...	1	Je	9	10	49	8●○	52	36	5	15	10	56	54	8		
Vik. 1975	Ani ...	6	Je	14	32	2	Jl	15	Ashada ...	2	Jl	8	42	39	...	16	44	7	13	44	86	25	58		
(S.) Kalayukta.	Adi ...	3	Jl	16	32	6	Au	16	Sravana ...	4	Au	7	14	29	6	45	39	9	12	17	115	57	48		
K. 1093 (S.M.)	Avani ...	7	Au	17	31	2	S	16	Bhadrapada .	5	S	5	46	19	...	20	56	11	10	51	145	29	38		
K. 1093 (N.M)	Purattasi...	3	S	17	30	4	O	16	Asvina ...	7	O	5	18	9	...	2	30	13	9	24	175	1	28		
10 g., 12 p.	Aippasi ...	5	O	17	30	6	N	15	Kartika ...	1	N	3	49	59	...	48	18	15	7	58	204	33	18		
B. S. 1324.	Kartigai...	7	N	16	30	7	D	14	Margasira ...	3	D	3	21	49	... ●	34	31	17	6	32	234	5	8		
(N.) Pramoda	Margali ...	1	D	15	30	2	Ja	13	Pausha ...	4	Ja	1	53	39	2	17	38	19	5	5	263	36	58		
A. D. 1919	Tai ...	3	Ja	14	29	3	F	11	Magha ...	6	Ja	31	25	30	...	55	11	21	3	39	293	8	49		
H. 1338	Masi ...	4	F	12	30	5	Mr	13	Phalguna ...	7	Mr	1	57	20	2	26	22	23	2	12	322	40	39		
Sep. 26.	Panguni ...	6	Mr	14	30	7	Ap	12	Chaitra ...	2	Mr	31	29	10	...	51	44	25	0	46	352	12	29		
K. Y. 5020	Chittirai...	1	Ap	13	31	3	My	13	Vaisakha ...	4	Ap	30	1	0	...	12	43	26	59	20	16	28	47	1 day, 15 ghat., 58 palas.	2 „ 17 „ 38 „
Sak. 1841	Vaikasi ...	4	My	14	32	7	Je	14	Jyeshta ...	5	My	29	32	50	... ●	31	6	1	24	37	46	0	37		
Vik. 1976.	Ani ..	1	Je	15	31	3	Jl	15	Ashada ...	7	Je	28	4	40	27	49	14	3	23	10	75	32	28		
(S.) Siddharthi	Adi ...	4	Jl	16	32	7	Au	16	Sravana ...	1	Jl	27	36	30	...	9	44	5	21	45	105	4	18		
K. 1094 (S.M.)	Avani ...	1	Au	17	31	3	S	16	Bhadrapada .	3	Au	26	8	20	25	34	55	7	20	18	134	36	8		
K. 1094 (N.M.)	Purattasi...	4	S	17	30	5	O	16	Asvina ...	4	S	24	40	10	...	7	1	9	18	51	164	7	58		
25 g., 44 p.	Aippasi ...	6	O	17	30	7	N	15	Kartika ...	6	O	24	12	1	23○	46	48	11	17	25	193	39	48		
B. S. 1325.	Kartigai ...	1	N	16	30	2	D	15	Margasira ...	7	N	22	43	51	... ●	33	6	13	15	58	223	11	38		
(N.) Prajapati	Margali ...	3	D	16	29	3	Ja	13	Pausha ...	2	D	22	15	41	...	22	30	15	14	32	252	43	28		
A. D. 1920	Tai ...	4	Ja	14	30	5	F	12	Magha ...	3	Ja	20	47	31	21	9	57	17	13	6	282	15	18		
H. 1339	Masi ...	6	F	13	29	6	Mr	12	Phalguna ...	5	F	19	19	21	...	51	35	19	11	39	311	47	9		
Sep. 15.	Panguni ...	7	Mr	13	31	2	Ap	12	Chaitra ...	6	Mr	19	51	11	20	25	44	21	10	13	341	18	59		

TABLE XIII.

Sunrise from 8° to 12° N. Latitude.

Day of solar year.	Lat. 8° +300″ Long.			Lat. 9° +852″ Long.					Lat. 10° +564″ Long.			Lat. 11° +816″ Long.					Lat. 12° +212″ Long.		
	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Trivandram.** **A.D.** 1840—1920	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds **Rameswaram.** **A.D.** 1840—1920		Days of Solar months.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Madura.** **A.D.** 1840—1920	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Tanjore.** **A.D.** 1840—1920		**Eng. date.**	Eqn. of time in seconds	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Maisur.** **A.D** 1840—1920
1	—447	+31	+497	—443	+32	+1089	*Malayalam*, Medam; *Bengal*, Vaisakha.	1	—439	+34	+841	—435	+36	+1135	April	**13**	—431	+38	+572
2	445	61	530	441	65	1124		2	437	68	877	433	72	1173		**14**	429	75	611
3	443	92	562	439	97	1158		3	435	102	913	431	108	1211		**15**	428	113	650
4	440	123	596	436	130	1194		4	433	136	949	430	144	1248		**16**	426	150	689
5	438	153	629	434	162	1228		5	431	170	985	428	179	1285		**17**	424	188	729
6	436	184	661	432	194	1262		6	429	205	1022	426	215	1323		**18**	422	226	769
7	434	215	694	430	227	1297		7	427	239	1058	421	251	1361		**19**	420	263	808
8	433	245	726	429	259	1333		8	425	273	1094	421	287	1400		**20**	418	301	847
9	429	276	760	425	292	1367		9	422	307	1131	419	323	1438		**21**	415	338	888
10	428	307	792	424	324	1400		10	420	341	1168	416	359	1475		**22**	413	376	927
11	425	337	806	421	356	1415		11	417	375	1185	413	395	1493		**23**	410	414	946
12	421	368	820	417	389	1431		12	414	409	1202	411	431	1512		**24**	407	451	966
13	418	399	834	414	421	1447		13	411	443	1218	408	467	1530		**25**	404	489	985
14	415	429	848	411	454	1462		14	408	477	1235	405	503	1549		**26**	401	526	1005
15	413	460	860	409	486	1476		15	405	511	1252	401	538	1568		**27**	398	564	1024
16	409	491	875	405	518	1492		16	402	546	1269	398	574	1586		**28**	395	602	1044
17	405	521	890	401	551	1509		17	398	580	1287	395	610	1605		**29**	391	639	1064
18	402	552	904	398	583	1524		18	395	614	1303	391	646	1624		**30**	388	678	1084
19	398	583	918	394	616	1540		19	391	648	1321	388	682	1643		**1**	384	715	1104
20	394	613	933	390	648	1557		20	387	682	1339	384	718	1662		**2**	381	753	1124
21	390	644	948	386	680	1573	*Tamil*, Chittirai;	21	383	716	1357	380	754	1681		**3**	377	791	1144
22	387	675	961	382	713	1589		22	379	750	1375	376	790	1701		**4**	373	828	1165
23	384	705	975	379	745	1604		23	375	784	1392	372	826	1720		**5**	371	867	1183
24	381	736	989	377	778	1619		24	373	818	1408	370	862	1738		**6**	369	903	1202
25	378	767	1005	374	810	1634		25	370	852	1425	368	897	1755		**7**	367	941	1220
26	375	797	1016	372	842	1648		26	368	887	1441	366	933	1772		**8**	365	979	1239
27	372	828	1030	369	875	1653		27	365	921	1458	364	969	1790		**9**	363	1016	1257
28	369	859	1044	367	907	1678		28	363	955	1475	362	1005	1807		**10**	360	1053	1277
29	366	889	1057	364	940	1693		29	360	989	1492	359	1041	1826		**11**	358	1091	1295
30	363	920	1071	362	972	1707		30	358	1024	1506	357	1076	1843		**12**	356	1128	1304
31	360	931	1090	360	984	1722	*Tamil*, Vaikasi; *Malayalam*, Edavam; *Bengal*, Jyeshta.	1	356	1038	1522	354	1091	1861	May	**13**	353	1144	1333
32	357	941	1099	357	996	1737		2	354	1052	1537	352	1107	1879		**14**	351	1161	1352
33	354	952	1112	355	1009	1751		3	352	1065	1552	350	1122	1896		**15**	348	1177	1371
34	351	963	1126	353	1021	1765		4	350	1079	1568	348	1138	1914		**16**	346	1194	1390
35	348	973	1140	350	1033	1780		5	348	1093	1584	346	1153	1931		**17**	344	1210	1408
36	346	984	1152	344	1045	1799		6	342	1107	1604	340	1168	1952		**18**	338	1227	1431
37	340	995	1169	338	1058	1817		7	336	1121	1624	334	1184	1974		**19**	332	1243	1453
38	334	1006	1186	332	1070	1835		8	330	1134	1643	328	1199	1995		**20**	326	1260	1476
39	328	1016	1203	326	1082	1853		9	324	1148	1663	322	1215	2017		**21**	320	1276	1498
40	321	1027	1220	319	1095	1873		10	317	1162	1684	315	1230	2039		**22**	313	1293	1522
41	315	1038	1237	313	1107	1891		11	311	1176	1704	309	1245	2059		**23**	307	1309	1545
42	308	1048	1247	306	1119	1885		12	304	1190	1700	302	1261	2054		**24**	300	1326	1541
43	301	1059	1225	299	1131	1880		13	297	1203	1694	295	1276	2049		**25**	294	1342	1535
44	295	1070	1219	293	1144	1873		14	291	1217	1688	289	1282	2043		**26**	287	1359	1531
45	288	1081	1213	286	1156	1864		15	284	1231	1682	282	1307	2038		**27**	280	1375	1527
46	281	1091	1207	279	1168	1862		16	277	1245	1677	275	1322	2033		**28**	274	1392	1521
47	274	1102	1202	272	1180	1857		17	270	1259	1672	268	1338	2029		**29**	267	1408	1517
48	267	1113	1196	265	1193	1851		18	263	1272	1666	261	1353	2024		**30**	260	1425	1513
49	260	1123	1190	258	1205	1846		19	256	1286	1661	254	1369	2021		**31**	253	1441	1509
50	252	1134	1185	250	1217	1841		20	248	1300	1656	247	1384	2014		**1**	245	1458	1505
51	245	1145	1180	243	1229	1836		21	241	1314	1651	240	1399	2009	June	**2**	238	1474	1501
52	238	1156	1174	236	1242	1830		22	234	1328	1646	232	1415	2005		**3**	231	1491	1497
53	230	1166	1169	228	1254	1826		23	226	1341	1641	225	1430	2000		**4**	223	1507	1493
54	223	1177	1163	221	1266	1820		24	219	1355	1636	217	1446	1996		**5**	216	1524	1489
55	215	1188	1159	213	1278	1815		25	211	1369	1631	210	1461	1991		**6**	208	1540	1486
56	208	1198	1153	206	1291	1810		26	204	1383	1626	202	1476	1987		**7**	201	1557	1481
57	199	1209	1149	197	1303	1806		27	195	1397	1623	194	1492	1984		**8**	193	1573	1478
58	194	1220	1141	192	1315	1799		28	190	1410	1615	190	1507	1976		**9**	189	1590	1471
59	189	1231	1134	187	1327	1791		29	186	1424	1607	186	1523	1968		**10**	185	1606	1464
60	184	1241	1126	182	1340	1784		30	182	1438	1598	182	1528	1960		**11**	181	1623	1456
61	179	1252	1118	178	1352	1775		31	178	1452	1590	178	1552	1952		**12**	177	1640	1449
62	174	1230	1111	174	1339	1767		32	174	1440	1582	174	1540	1944		**13**	174	1629	1441

TABLE XIII.

Sunrise from 8° to 12° N. Latitude.

	Lat. 8° +300″ Long.			Lat. 9° +852″ Long.					Lat. 10° +564″ Long.			Lat. 11° +816″ Long.					Lat. 12° +212″ Long.		
Day of Solar year.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Trivandram. A.D. 1840—1920	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Rameswaram. A.D. 1840—1920		Days of Solar months.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Madura. A.D. 1840—1920	Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Tanjore. A.D. 1840—1920		Eng. date.	Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Maisur. A.D. 1840—1920
63	—165	+1226	+1107	—165	+1327	+1763	Tamil, Ani; Malayalam, Mithunam; Bengal, Ashada.	1	—165	+1427	+1578	—165	+1528	+1941		14	—165	+1617	+1438
64	156	1214	1103	156	1314	1860		2	156	1415	1575	156	1516	1938		15	156	1606	1436
65	147	1201	1099	147	1302	1757		3	147	1402	1571	147	1504	1935		16	147	1595	1434
66	138	1188	1096	138	1289	1753		4	138	1390	1568	138	1492	1932		17	138	1583	1431
67	129	1176	1092	129	1277	1749		5	129	1378	1565	129	1481	1930		18	128	1572	1430
68	120	1163	1088	120	1264	1746		6	120	1365	1561	119	1469	1928		19	119	1561	1428
69	110	1150	1085	110	1252	1743		7	110	1353	1559	110	1459	1925		20	110	1550	1426
70	101	1137	1082	101	1239	1739		8	101	1340	1555	101	1445	1922		21	100	1538	1424
71	91	1125	1079	91	1227	1737		9	91	1328	1553	91	1433	1921	June	22	91	1527	1421
72	82	1112	1065	82	1214	1723		10	82	1316	1539	82	1421	1907		23	81	1516	1407
73	72	1099	1053	72	1202	1711		11	72	1303	1526	72	1409	1893		24	72	1504	1392
74	63	1086	1039	63	1189	1697		12	63	1291	1513	63	1397	1879		25	62	1493	1378
75	54	1074	1026	54	1176	1683		13	54	1278	1499	54	1385	1865		26	54	1482	1362
76	43	1061	1014	43	1164	1671		14	43	1266	1487	43	1373	1852		27	43	1470	1349
77	34	1048	1001	34	1151	1658		15	34	1254	1473	34	1362	1838		28	34	1459	1335
78	25	1035	987	25	1139	1644		16	25	1241	1459	25	1350	1824		29	24	1448	1321
79	15	1023	975	15	1126	1631		17	15	1229	1447	15	1338	1811		30	15	1437	1306
80	5	1010	962	5	1114	1619		18	5	1216	1434	5	1326	1797		1	5	1425	1292
81	+ 4	997	949	+ 4	1101	1605		19	+ 4	1204	1420	+ 4	1314	1783		2	+ 4	1414	1277
82	14	985	936	14	1089	1592		20	14	1192	1407	14	1302	1770		3	14	1403	1263
83	23	972	923	23	1076	1571		21	23	1179	1393	23	1290	1755		4	23	1391	1248
84	33	959	910	33	1064	1566		22	33	1167	1381	33	1278	1742		5	33	1380	1234
85	43	946	898	43	1051	1553		23	43	1154	1368	43	1266	1729		6	43	1369	1220
86	52	934	884	52	1039	1539		24	52	1142	1354	52	1254	1714		7	52	1357	1205
87	61	921	871	61	1026	1526		25	61	1130	1340	61	1243	1700		8	61	1346	1191
88	71	908	858	71	1014	1513		26	71	1117	1327	71	1231	1687		9	71	1335	1177
89	81	895	846	81	1001	1500		27	81	1105	1315	81	1219	1674		10	81	1324	1163
90	90	883	832	90	988	1486		28	90	1092	1301	90	1207	1659		11	90	1312	1148
91	104	870	824	104	976	1478		29	104	1080	1292	104	1196	1650		12	104	1300	1138
92	114	847	811	114	953	1465		30	114	1057	1279	114	1173	1637		13	114	1276	1124
93	124	825	799	124	931	1452		31	124	1034	1266	124	1149	1623	July	14	124	1252	1110
94	133	802	785	133	908	1439		32	133	1012	1253	134	1126	1610		15	134	1228	1096
95	143	780	773	143	885	1426	Tamil, Adi; Malayalam, Karkatagam; Bengal, Sravana.	1	143	989	1240	143	1103	1596		16	144	1204	1082
96	153	757	760	153	862	1413		2	153	966	1227	153	1079	1582		17	153	1180	1067
97	162	735	747	162	840	1399		3	162	943	1213	163	1056	1569		18	163	1157	1054
98	172	712	734	172	817	1387		4	172	920	1200	172	1033	1555		19	173	1133	1040
99	182	690	721	182	794	1374		5	182	898	1188	182	1010	1542		20	182	1109	1025
100	191	667	708	191	772	1359		6	191	875	1174	191	986	1527		21	191	1085	1010
101	200	645	694	200	749	1347		7	200	852	1160	200	963	1513		22	201	1061	996
102	209	622	681	209	726	1333		8	209	829	1145	210	940	1498		23	210	1037	982
103	218	600	680	218	703	1331		9	218	806	1141	219	916	1492		24	219	1013	975
104	228	577	680	228	681	1329		10	228	784	1138	228	893	1487		25	229	989	970
105	237	555	680	237	658	1327		11	237	761	1134	237	870	1481		26	238	965	963
106	246	532	679	246	635	1325		12	246	738	1130	246	846	1476		27	247	941	956
107	253	510	676	253	613	1320		13	254	715	1125	255	823	1470		28	256	918	949
108	261	487	675	262	590	1318		14	263	692	1122	264	800	1465		29	265	894	943
109	271	465	675	272	567	1317		15	272	670	1118	273	777	1459		30	273	870	935
110	280	442	674	280	544	1313		16	281	647	1114	281	753	1453		31	282	846	928
111	288	420	672	289	522	1311		17	289	624	1109	290	730	1447		1	290	822	921
112	297	397	672	297	499	1308		18	298	601	1105	298	707	1441		2	299	798	914
113	306	375	671	306	476	1305		19	306	578	1100	307	683	1435		3	307	774	906
114	315	352	670	315	454	1293		20	315	556	1096	316	660	1430		4	316	750	900
115	323	330	668	323	431	1300		21	323	533	1091	324	637	1423		5	324	726	892
116	331	307	667	331	408	1296		22	331	510	1086	332	613	1417		6	332	702	884
117	338	285	664	339	385	1293		23	339	487	1081	339	590	1409		7	340	679	876
118	347	262	663	347	363	1290		24	347	464	1077	348	567	1404	August	8	348	655	869
119	353	239	659	354	340	1285		25	354	442	1071	355	544	1396		9	356	631	861
120	356	217	656	357	317	1275		26	358	419	1062	359	520	1386			360	607	849
121	359	194	659	360	295	1265		27	362	396	1053	363	497	1375		1	364	583	838
122	362	172	662	363	272	1260		28	366	372	1044	367	472	1365		2	369	560	827
123	365	162	665	367	261	1253		29	369	359	1034	371	457	1354		3	374	544	816
124	372	152	672	374	249	1249		30	376	346	1028	379	443	1348		[illegible]	380	529	807
125	379	143	679	381	238	1244		31	383	333	1022	385	428	1339		15	387	513	798

TABLE XIII.

Sunrise from 8° to 12° N. Latitude.

Solar months (days 1–31): Tamil, Avani; Malayalam, Chingam; Bengal, Bhadrapada. Solar months (days 1–30): Tamil, Purattasi; Malayalam, Kanni; Bengal, Asvina.

Day of solar year.	Lat. 8° +300″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Trivandram. A.D. 1840—1920	Lat. 9° +852″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Rameswaram. A.D. 1840—1920	Days of Solar months.	Lat. 10° +564″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Madura. A.D. 1840—1920	Lat. 11° +786″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Tanjore. A.D. 1840—1920	Eng. date.	Lat. 12° +212″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Maisur. A.D. 1840—1920
126	+385	+133	+685	+387	+227	+1239	1	+389	+320	+1015	+392	+414	+1332	**16** August	+394	+497	+789
127	390	123	690	393	215	1245	2	396	307	1009	399	399	1324	**17**	401	481	780
128	396	114	696	399	204	1251	3	402	295	1003	405	385	1316	**18**	407	466	771
129	405	104	705	407	193	1259	4	409	282	997	411	370	1307	**19**	413	450	761
130	409	94	709	412	181	1264	5	415	269	990	418	356	1300	**20**	420	434	752
131	415	84	715	418	170	1270	6	421	256	985	424	341	1291	**21**	426	419	743
132	421	75	721	424	159	1276	7	427	243	991	430	327	1282	**22**	432	403	732
133	427	65	727	430	147	1282	8	433	230	997	436	312	1287	**23**	438	387	735
134	434	55	734	437	136	1289	9	439	217	1003	441	298	1291	**24**	444	372	738
135	438	45	738	441	125	1293	10	444	204	1008	447	283	1295	**25**	449	356	741
136	444	36	744	447	113	1299	11	450	191	1014	453	269	1300	**26**	455	340	744
137	449	26	749	452	102	1304	12	455	178	1019	458	254	1304	**27**	460	324	746
138	454	16	754	457	91	1309	13	460	166	1024	463	240	1308	**28**	465	309	748
139	461	6	761	464	79	1316	14	466	153	1030	468	225	1312	**29**	471	293	751
140	464	0	764	467	68	1319	15	470	140	1034	473	211	1315	**30**	475	277	753
141	469	0	769	472	57	1324	16	475	127	1039	478	196	1319	**31**	480	262	755
142	474	0	774	477	45	1329	17	480	114	1044	483	182	1323	**1**	485	246	757
143	478	0	778	481	34	1333	18	484	101	1048	487	167	1326	**2**	490	230	759
144	483	0	783	486	23	1338	19	489	88	1053	490	153	1328	**3**	494	215	760
145	484	0	784	487	11	1339	20	490	75	1054	492	138	1328	**4**	497	199	761
146	486	0	786	488	0	1340	21	491	62	1055	494	124	1329	**5**	500	183	761
147	487	0	787	490	0	1342	22	493	49	1057	495	109	1329	**6**	502	167	760
148	489	0	789	491	0	1343	23	494	37	1058	496	95	1329	**7**	504	152	759
149	490	0	790	492	0	1344	24	495	24	1059	497	80	1329	**8**	506	136	758
150	491	0	791	494	0	1346	25	496	11	1060	499	66	1329	**9**	507	120	757
151	492	0	792	495	0	1347	26	498	0	1062	500	51	1329	**10**	508	105	755
152	494	0	794	496	0	1348	27	499	0	1063	501	36	1329	**11**	509	88	753
153	495	0	795	497	0	1349	28	500	0	1064	502	35	1329	**12**	510	85	751
154	496	0	796	498	0	1350	29	501	0	1065	503	34	1329	**13**	511	82	749
155	498	0	798	499	0	1351	30	502	0	1066	504	32	1328	**14**	512	80	748
156	500	0	800	500	0	1352	31	503	0	1067	506	31	1329	**15**	513	77	746
157	501	0	801	501	0	1353	1	504	0	1068	508	30	1330	**16** September	514	74	744
158	502	0	802	503	0	1355	2	506	0	1070	510	29	1331	**17**	515	71	742
159	503	0	803	505	0	1357	3	508	0	1072	512	28	1332	**18**	516	68	740
160	504	0	804	507	0	1359	4	510	0	1074	514	26	1332	**19**	518	66	740
161	505	0	805	509	0	1361	5	512	0	1076	515	25	1332	**20**	519	63	738
162	506	0	806	510	0	1362	6	513	0	1077	517	24	1333	**21**	520	60	736
163	508	0	808	512	0	1364	7	514	0	1078	518	23	1334	**22**	522	57	734
164	509	0	809	513	0	1365	8	516	0	1080	520	22	1335	**23**	524	54	733
165	510	0	810	514	0	1366	9	517	0	1081	521	20	1335	**24**	525	52	731
166	511	0	811	515	0	1367	10	517	0	1081	521	19	1333	**25**	525	49	728
167	512	0	812	515	0	1367	11	519	0	1083	522	18	1333	**26**	526	46	726
168	513	0	813	516	0	1368	12	519	0	1083	523	17	1333	**27**	527	43	725
169	513	0	813	516	0	1368	13	520	0	1084	524	16	1333	**28**	527	40	722
170	513	0	813	516	0	1368	14	520	0	1084	524	14	1332	**29**	528	38	720
171	514	0	814	517	0	1369	15	521	0	1085	524	13	1330	**30**	528	35	717
172	515	0	815	518	0	1370	16	521	0	1085	525	12	1330	**1**	528	32	714
173	515	0	815	518	0	1370	17	521	0	1085	524	11	1328	**2**	528	29	711
174	514	0	814	517	0	1369	18	520	0	1084	524	10	1327	**3**	528	26	708
175	513	0	813	516	0	1368	19	520	0	1084	524	8	1326	**4**	527	24	704
176	512	0	812	516	0	1368	20	520	0	1084	523	7	1323	**5**	527	21	701
177	511	0	811	515	0	1367	21	519	0	1083	523	6	1322	**6** October	526	18	697
178	510	0	810	514	0	1366	22	518	0	1082	522	5	1320	**7**	525	15	694
179	509	0	809	513	0	1365	23	517	0	1081	521	4	1318	**8**	525	12	691
180	508	0	808	512	0	1364	24	516	0	1080	520	2	1316	**9**	524	10	687
181	507	0	807	511	0	1363	25	514	0	1078	518	1	1312	**10**	522	7	682
182	506	0	806	510	0	1362	26	513	0	1077	517	0	1310	**11**	521	4	678
183	505	0	805	509	0	1361	27	512	0	1076	515	0	1307	**12**	519	0	673
184	504	0	804	508	0	1360	28	511	0	1075	514	—1	1305	**13**	518	—3	669
185	503	0	803	506	0	1358	29	509	0	1073	512	2	1302	**14**	516	6	664
186	501	0	801	504	0	1356	30	507	0	1071	510	4	1298	**15**	514	9	659

TABLE XIII.

Sunrise from 8° to 12° N. Latitude.

Solar months: Days 1–30 (Days of Solar Year 187–216): *Tamil*, Aippasi; *Malayalam*, Tulam; *Bengal*, Kartika. Days 1–30 (Days of Solar Year 217–246): *Tamil*, Kartigai; *Malayalam*, Vrischikam; *Bengal*, Margasira.

Day of Solar year.	Lat. 8° +300″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Trivandram. A.D. 1840—1920	Lat. 9° +852″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Rameswaram. A.D. 1840—1920	Days of Solar Months.	Lat. 10° +564″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Madura. A.D. 1840—1920	Lat. 11° +816″ Long. Eqn. of time in seconds.	☉'s Trop. Long in seconds.	Total Corrn. in seconds. Tanjore. A.D. 1840—1920	Eng. date.	Lat. 12° +212″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Maisur. A.D. 1840—1920
187	+499	+0	+799	+502	+0	+1354	1	+505	+0	+1069	+508	—5	+1295	October 16	+512	—12	+654
188	497	0	797	500	0	1352	2	503	0	1067	506	6	1292	17	510	14	650
189	494	0	794	497	0	1349	3	500	0	1064	503	7	1288	18	507	17	644
190	491	0	791	494	0	1346	4	497	0	1061	500	8	1284	19	504	20	638
191	488	0	788	491	0	1343	5	494	0	1058	497	10	1279	20	501	23	632
192	485	0	785	488	0	1340	6	491	0	1055	494	11	1275	21	498	26	626
193	482	0	782	485	0	1337	7	488	0	1052	491	12	1271	22	495	29	619
194	479	0	779	482	0	1334	8	485	0	1049	488	13	1254	23	492	32	600
195	476	0	776	479	0	1331	9	482	0	1036	485	14	1236	24	489	35	581
196	473	0	773	476	0	1328	10	479	0	1020	482	16	1219	25	486	38	563
197	469	0	769	472	0	1324	11	475	0	1003	478	17	1200	26	482	41	543
198	465	0	765	468	0	1320	12	471	0	987	474	18	1182	27	478	43	524
199	462	0	762	465	0	1317	13	468	0	971	471	19	1164	28	475	46	505
200	458	0	758	461	0	1302	14	464	0	954	467	20	1146	29	471	49	485
201	454	0	754	457	0	1286	15	460	0	937	463	22	1127	30	467	52	465
202	450	0	750	453	0	1271	16	456	0	920	459	23	1109	31	463	55	446
203	445	0	745	448	0	1255	17	451	0	902	454	24	1089	November 1	458	58	422
204	440	0	740	443	0	1238	18	446	0	884	449	25	1070	2	453	61	405
205	436	0	736	439	0	1223	19	442	0	867	445	26	1051	3	449	64	385
206	431	0	725	434	0	1207	20	437	0	849	440	28	1032	4	444	67	364
207	427	0	711	430	0	1191	21	433	0	832	436	29	1013	5	440	70	344
208	422	0	696	425	0	1175	22	428	0	815	431	30	994	6	435	72	324
209	417	0	681	420	0	1159	23	423	0	797	425	31	973	7	429	75	302
210	413	0	668	416	0	1143	24	419	0	780	420	32	954	8	424	78	281
211	411	0	656	414	0	1130	25	417	0	765	418	34	937	9	422	81	263
212	409	0	644	412	0	1117	26	415	0	750	416	35	921	10	420	84	246
213	407	0	632	410	0	1103	27	413	0	735	414	36	904	11	418	88	228
214	405	0	621	408	0	1090	28	411	0	720	412	50	888	12	416	104	210
215	403	0	609	406	0	1077	29	409	—10	705	410	65	871	13	414	120	193
216	397	0	593	400	0	1059	30	403	23	686	406	79	853	14	408	135	171
217	391	0	577	394	0	1042	1	397	36	667	400	94	832	15	402	151	149
218	385	0	562	388	0	1025	2	391	48	649	394	108	812	16	396	166	128
219	378	0	545	381	0	1006	3	384	61	629	387	123	790	17	389	182	105
220	372	0	529	375	—11	989	4	+378	74	610	381	137	770	18	383	198	83
221	365	0	513	368	23	971	5	371	87	590	374	152	748	19	376	214	60
222	358	0	496	361	34	952	6	366	100	572	367	166	727	20	369	229	38
223	351	0	479	354	45	934	7	357	113	549	360	181	704	21	362	245	14
224	344	0	450	347	57	904	8	350	126	519	353	195	674	22	355	261	— 17
225	337	0	420	340	68	875	9	343	139	489	346	210	643	23	348	276	47
226	330	— 6	391	333	79	845	10	336	152	460	339	224	613	24	341	292	71
227	322	16	360	325	91	814	11	328	165	429	331	239	582	25	333	308	119
228	315	26	330	318	102	785	12	321	177	399	324	253	552	26	326	323	141
229	307	36	300	310	113	754	13	313	190	368	316	268	520	27	318	339	173
230	299	45	269	302	125	723	14	305	203	337	308	282	489	28	310	355	205
231	291	55	239	294	136	692	15	297	216	307	300	297	458	29	302	371	237
232	283	65	208	286	147	662	16	289	229	276	292	311	426	30	294	386	269
233	275	75	178	278	159	631	17	281	242	245	284	326	395	December 1	286	402	301
234	266	84	146	269	170	599	18	272	255	213	275	340	363	2	277	418	334
235	258	94	116	261	181	569	19	264	268	182	267	355	331	3	269	433	366
236	250	104	85	253	193	538	20	256	281	152	259	369	300	4	261	449	398
237	242	114	55	245	204	507	21	248	294	121	251	384	269	5	253	465	430
238	233	123	23	236	215	475	22	239	306	89	242	398	237	6	244	480	462
239	224	133	— 8	227	227	444	23	230	319	57	233	413	204	7	235	496	495
240	216	143	39	219	238	413	24	222	332	26	225	427	173	8	227	512	527
241	207	152	70	210	249	381	25	213	345	— 5	216	442	141	9	218	528	560
242	199	162	103	201	261	350	26	204	358	37	207	456	108	10	209	543	593
243	198	172	122	199	272	325	27	199	372	65	199	472	77	11	199	560	627
244	190	194	155	190	295	293	28	190	395	97	190	495	45	12	190	584	660
245	180	217	187	180	317	260	29	180	418	130	180	519	— 11	13	180	608	694
246	170	239	220	170	340	228	30	170	440	162	170	542	22	14	170	632	728

TABLE XIII.

Sunrise from 8° to 12° N Latitude.

Day of Solar year.	Lat. 8° Eqn. of time in seconds.	Lat. 8° ⊙'s Trop. Long. in seconds.	Lat. 8° +300″ Long. Total Corrn. in seconds. Trivandram. A.D. 1840—1920	Lat. 9° Eqn. of time in seconds.	Lat. 9° ⊙'s Trop. Long. in seconds.	Lat. 9° +852″ Long. Total Corrn. in seconds. Rameswaram. A.D. 1840—1920	Days of Solar Months.	Lat. 10° Eqn. of time in seconds.	Lat. 10° ⊙'s Trop. Long. in seconds.	Lat. 10° +564″ Long. Total Corrn. in seconds. Madura. A.D. 1840—1920	Lat. 11° Eqn. of time in seconds.	Lat. 11° ⊙'s Trop. Long. in seconds.	Lat. 11° +816″ Long. Total Corrn. in seconds. Tanjore. A.D. 1840—1920	Eng. date.	Lat. 12° Eqn. of time in seconds.	Lat. 12° ⊙'s Trop. Long. in seconds.	Lat. 12° +212″ Long. Total Corrn. in seconds. Maisur. A.D. 1840—1920
247	+160	—262	—252	+160	—363	+195	1	+160	—463	—195	+160	—565	—55	**15**	+160	—656	—762
248	150	285	285	150	385	162	2	150	486	228	150	588	88	**16**	150	679	795
249	140	307	317	140	408	130	3	140	509	261	140	612	122	**17**	140	703	829
250	130	330	350	130	431	97	4	130	532	294	130	635	155	**18**	130	727	863
251	120	352	362	120	454	64	5	120	554	326	120	658	188	**19**	120	751	897
252	110	375	415	110	476	31	6	110	577	359	110	682	222	**20**	110	775	931
253	100	397	447	100	499	— 1	7	100	600	392	100	705	255	**21**	100	799	965
254	90	420	480	90	522	34	8	90	623	426	90	728	290	**22**	90	823	998
255	80	442	503	80	544	56	9	80	646	448	80	752	312	**23**	80	847	1019
256	70	465	525	70	567	79	10	70	668	471	70	775	334	**24**	70	871	1041
257	60	487	548	60	590	102	11	60	691	493	60	798	356	**25**	60	895	1062
258	50	510	571	50	613	124	12	50	714	516	50	821	378	**26**	50	918	1083
259	40	532	594	40	635	147	13	40	737	538	40	845	399	**27**	40	942	1104
260	30	555	616	30	658	169	14	30	760	560	30	868	421	**28**	30	966	1126
261	20	577	639	20	681	192	15	20	782	583	20	891	443	**29**	20	990	1147
262	10	600	662	10	703	214	16	10	805	605	10	915	465	**30**	10	1014	1168
263	0	622	685	0	726	237	17	0	828	628	0	938	487	**31**	0	1038	1190
264	—10	645	707	—10	749	257	18	—10	851	649	—10	961	508	**1**	—10	1062	1210
265	20	667	730	20	772	280	19	20	874	676	20	985	529	**2**	20	1086	1230
266	29	690	752	28	794	302	20	28	896	693	28	1008	551	**3**	28	1110	1252
267	38	712	773	37	817	324	21	37	919	714	37	1031	572	**4**	37	1134	1272
268	48	735	796	47	840	346	22	47	942	737	47	1054	594	**5**	47	1157	1293
269	59	757	820	57	862	369	23	57	965	759	57	1078	615	**6**	57	1181	1314
270	68	780	842	66	885	390	24	66	988	780	66	1101	636	**7**	66	1205	1335
271	78	802	864	77	908	414	25	77	1010	804	77	1124	659	**8**	77	1229	1357
272	88	825	887	87	931	437	26	87	1033	826	87	1148	681	**9**	87	1253	1378
273	98	847	910	97	953	459	27	97	1056	849	97	1171	703	**10**	97	1277	1400
274	104	870	929	104	976	479	28	104	1080	868	104	1196	722	**11**	104	1300	1418
275	111	883	948	111	988	498	29	111	1092	887	111	1208	741	**12**	111	1311	1436
276	119	895	969	118	1001	518	1	118	1105	907	118	1220	760	**13**	118	1323	1455
277	126	908	988	126	1014	539	2	125	1117	926	125	1232	778	**14**	125	1334	1473
278	134	921	1010	133	1026	558	3	133	1130	947	132	1246	798	**15**	132	1345	1491
279	141	934	1029	140	1039	577	4	140	1142	966	139	1255	816	**16**	139	1356	1509
280	149	946	1050	148	1051	598	5	147	1154	985	146	1267	835	**17**	146	1368	1528
281	156	959	1070	155	1064	617	6	154	1167	1006	154	1279	855	**18**	153	1379	1546
282	164	972	1090	162	1076	637	7	162	1179	1025	161	1291	874	**19**	160	1390	1564
283	171	985	1110	170	1089	657	8	169	1192	1045	168	1303	893	**20**	167	1402	1583
284	179	997	1131	177	1101	677	9	176	1204	1064	175	1315	911	**21**	174	1413	1602
285	186	1010	1127	184	1114	672	10	183	1216	1057	182	1329	903	**22**	181	1424	1592
286	194	1023	1125	192	1126	667	11	191	1229	1051	189	1339	894	**23**	188	1436	1583
287	201	1035	1121	199	1139	662	12	198	1241	1045	196	1351	886	**24**	195	1447	1573
288	209	1048	1118	206	1151	657	13	205	1254	1038	204	1363	878	**25**	202	1458	1564
289	216	1061	1114	214	1164	653	14	212	1266	1031	211	1374	870	**26**	209	1469	1554
290	224	1074	1112	221	1176	647	15	220	1278	1025	218	1386	862	**27**	216	1481	1545
291	231	1086	1108	228	1189	642	16	227	1291	1018	225	1398	853	**28**	223	1492	1535
292	239	1099	1105	236	1202	638	17	234	1303	1012	232	1410	845	**29**	230	1503	1526
293	246	1112	1102	243	1214	633	18	241	1316	1005	239	1422	836	**30**	237	1515	1516
294	254	1125	1099	250	1227	627	19	249	1328	999	246	1434	828	**31**	244	1526	1507
295	261	1137	1095	258	1239	623	20	256	1340	992	254	1446	821	**1**	251	1537	1497
296	269	1150	1092	265	1252	618	21	263	1353	985	261	1458	812	**2**	258	1549	1488
297	276	1163	1089	272	1264	613	22	270	1365	979	268	1470	804	**3**	265	1560	1478
298	284	1176	1086	280	1277	608	23	278	1378	973	275	1482	795	**4**	273	1571	1470
299	291	1188	1082	287	1289	603	24	285	1390	966	282	1493	787	**5**	281	1582	1461
300	299	1201	1080	294	1302	598	25	292	1402	959	289	1505	779	**6**	288	1594	1452
301	306	1214	1076	302	1314	594	26	299	1415	952	296	1517	770	**7**	295	1605	1442
302	314	1226	1073	309	1327	588	27	306	1427	946	304	1529	763	**8**	303	1616	1434
303	321	1239	1069	316	1339	583	28	314	1440	940	311	1541	754	**9**	310	1628	1424
304	325	1252	1063	323	1352	578	29	321	1452	933	318	1552	746	**10**	317	1640	1415
305	328	1241	1055	326	1340	569	30	324	1438	922	321	1537	734	**11**	320	1623	1401

Days of Solar Months (side labels): 1–29 (days 247–275): *Bengal*, Pausha; *Malayalam*, Dhanus; *Tamil*, Margali. 1–30 (days 276–305): *Bengal*, Magha; *Malayalam* Magaram; *Tamil*, Tai.

Eng. date (side labels): December (15–31); January (1–31); February (1–11).

TABLE XIII.

Sunrise from 8° to 12° N. Latitude.

	Lat. 8° +300″ Long.			Lat. 9° +852″ Long.				Lat. 10° +564″ Long.			Lat. 11° +816″ Long.				Lat. 12° +212″ Long.		
Day of Solar year.	Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Trivandram.** A.D. 1840—1920	Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Rameswaram.** A.D. 1840—1920	Days of Solar months.	Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Madura.** A.D. 1840—1920	Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Tanjore.** A.D. 1840—1920	Eng. date.	Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Maisur.** A.D. 1840—1920
306	—332	—1231	—1048	—330	—1327	—560	1	—327	—1424	—911	—324	—1521	—721	**12**	—323	—1607	—1388
307	335	1220	1041	333	1315	551	2	331	1411	902	328	1506	710	**13**	327	1590	1375
308	339	1209	1034	334	1303	543	3	334	1397	891	331	1490	697	**14**	330	1574	1362
309	342	1198	1026	340	1291	533	4	337	1383	880	334	1475	685	**15**	333	1557	1348
310	346	1188	1019	344	1278	525	5	341	1369	870	338	1460	674	**16**	337	1541	1336
311	349	1177	1012	347	1266	516	6	344	1355	859	341	1444	661	**17**	340	1524	1322
312	353	1166	1005	351	1254	509	7	347	1342	849	344	1429	649	**18**	343	1508	1309
313	356	1156	997	354	1242	498	8	351	1328	839	348	1413	637	**19**	347	1491	1296
314	360	1145	990	358	1229	490	9	354	1314	828	351	1398	625	**20**	350	1475	1283
315	363	1134	983	361	1217	481	10	357	1300	817	354	1383	614	**21**	353	1458	1268
316	367	1123	956	365	1205	453	11	361	1281	787	358	1367	582	**22**	357	1442	1245
317	370	1113	929	368	1193	423	12	364	1273	756	361	1352	549	**23**	360	1455	1201
318	374	1102	902	372	1180	395	13	367	1259	725	364	1336	516	**24**	363	1409	1166
319	377	1091	874	375	1168	360	14	371	1245	685	368	1321	484	**25**	367	1392	1133
320	381	1081	847	379	1156	337	15	374	1231	674	371	1306	451	**26**	370	1376	1098
321	384	1070	820	382	1144	308	16	377	1217	633	374	1290	419	**27**	373	1359	1063
322	388	1059	793	386	1131	279	17	381	1204	602	378	1275	387	**28**	377	1343	1030
323	391	1048	766	389	1119	250	18	384	1190	571	381	1259	354	**1**	380	1326	995
324	395	1038	739	393	1107	221	19	387	1176	540	384	1244	321	**2**	383	1310	961
325	398	1027	711	396	1095	192	20	391	1162	510	388	1229	289	**3**	387	1293	927
326	402	1016	685	400	1082	164	21	394	1148	479	391	1213	256	**4**	390	1277	892
327	405	1006	657	403	1070	134	22	397	1135	448	394	1198	223	**5**	393	1260	858
328	409	995	630	407	1058	106	23	401	1121	418	398	1182	191	**6**	397	1244	824
329	412	984	603	410	1045	76	24	404	1107	387	401	1167	158	**7**	400	1227	790
330	415	973	575	414	1033	48	25	407	1093	356	404	1152	125	**8**	403	1211	755
331	418	963	547	417	1021	19	26	411	1079	326	408	1136	94	**9**	406	1194	720
332	422	962	521	419	1009	+ 12	27	414	1066	294	411	1121	61	**10**	408	1178	685
333	425	941	493	422	996	41	28	417	1052	263	414	1105	28	**11**	411	1161	650
334	429	931	465	425	984	71	29	421	1038	233	418	1090	+ 4	**12**	414	1145	616
335	432	920	439	428	972	100	1	424	1024	202	420	1076	38	**13**	417	1128	581
336	432	889	408	428	940	132	2	424	990	168	420	1040	74	**14**	417	1090	543
337	433	859	378	429	907	164	3	425	956	135	421	1004	109	**15**	418	1053	507
338	433	828	347	429	875	196	4	425	922	101	421	968	145	**16**	418	1015	469
339	434	797	318	430	842	228	5	426	888	68	422	932	180	**17**	419	978	433
340	434	766	287	430	810	260	6	426	854	34	422	896	216	**18**	419	940	395
341	435	736	258	431	778	291	7	427	820	1	423	861	250	**19**	420	902	358
342	435	705	227	431	745	324	8	427	785	+ 34	423	825	286	**20**	420	865	321
343	436	675	197	432	713	355	9	428	751	67	424	789	321	**21**	421	827	284
344	436	640	167	432	680	388	10	428	717	101	424	753	356	**22**	421	790	247
345	437	613	137	433	648	419	11	429	683	135	425	717	391	**23**	422	752	210
346	437	583	106	433	616	451	12	429	649	169	425	681	427	**24**	422	714	172
347	438	552	77	434	583	483	13	430	615	202	426	645	462	**25**	423	677	136
348	438	521	46	434	551	515	14	430	581	236	426	609	498	**26**	423	639	98
349	439	491	16	435	518	547	15	431	547	269	427	573	533	**27**	424	602	62
350	439	460	+ 14	435	486	579	16	431	513	303	427	537	568	**28**	424	564	24
351	440	429	44	436	454	610	17	432	479	337	428	502	603	**29**	425	526	+ 13
352	440	399	75	436	421	643	18	432	444	371	428	466	639	**30**	425	489	50
353	441	368	104	437	389	674	19	433	410	404	429	430	674	**31**	426	451	87
354	441	337	135	437	356	707	20	433	376	438	429	394	710	**1**	426	414	124
355	442	307	165	438	324	738	21	434	342	471	430	358	745	**2**	427	376	161
356	442	276	195	438	292	770	22	434	308	505	430	322	781	**3**	427	338	199
357	443	245	225	439	259	802	23	435	274	538	431	286	816	**4**	428	301	235
358	443	215	256	439	227	834	24	435	240	572	431	250	852	**5**	428	263	273
359	444	184	285	440	194	866	25	436	206	605	432	214	887	**6**	429	226	309
360	444	153	316	440	162	898	26	436	172	639	432	178	922	**7**	429	188	347
361	445	123	346	441	130	929	27	437	138	673	433	143	957	**8**	430	150	384
362	445	92	376	441	97	962	28	437	103	707	433	107	993	**9**	430	113	421
363	446	61	406	442	65	993	29	438	69	740	434	71	1028	**10**	431	75	459
364	446	31	437	442	32	1026	30	438	35	774	434	36	1064	**11**	431	38	496
365	447	0	466	443	0	1057	31	439	0	807	435	0	1099	**12**	432	0	533

Days of Solar months 1–29 (days 306–334): *Tamil*, Masi; *Malayalam*, Kumbam; *Bengal*, Phalguna.

Days of Solar months 1–31 (days 335–365): *Tamil*, Panguni; *Malayalam*, Meenam; *Bengal*, Chaitra.

Eng. date: February (12–28), March (1–31), April (1–12).

TABLE XIII.

Sunrise from 13° to 17° N. Latitude.

Day of Solar year.	Lat. 13° +1072″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total corrn. in seconds. Madras. A.D. 1840—1920	Lat. 14° +1008″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Nellore. A.D. 1840—1920	Days of Solar months.	Lat. 15° +168″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Vijianagaram. A.D. 1840—1920	Lat. 16° —300″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total corrn. in seconds. Belgaum. A.D. 1840—1920	Eng. date.	Lat. 17° +648″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Hyderabad. A.D. 1840—1920
1	—428	+39	+1464	—424	+41	+1445	1	—420	+43	+651	—417	+45	+212	13	—413	+46	+1208
2	426	78	1505	422	82	1488	2	418	86	697	415	89	259	14	411	93	1256
3	424	118	1546	420	123	1531	3	416	129	741	413	133	305	15	409	139	1305
4	423	157	1586	419	164	1573	4	415	172	785	411	178	352	16	408	186	1354
5	421	196	1627	417	205	1616	5	413	215	830	410	222	397	17	406	232	1401
6	419	235	1669	415	246	1659	6	411	258	875	407	267	445	18	404	278	1450
7	417	274	1705	413	287	1702	7	409	301	920	406	311	490	19	402	325	1498
8	414	314	1752	410	328	1746	8	407	344	965	403	351	538	20	399	371	1547
9	412	351	1783	406	369	1791	9	404	387	1011	401	395	584	21	397	418	1596
10	409	388	1839	405	410	1835	10	402	430	1056	398	440	638	22	395	464	1645
11	407	428	1859	403	451	1856	11	399	473	1082	396	484	662	23	392	510	1672
12	404	467	1880	400	492	1879	12	396	516	1106	393	529	688	24	389	557	1688
13	401	506	1901	397	533	1901	13	394	559	1128	391	573	712	25	387	603	1724
14	398	545	1922	394	574	1923	14	391	602	1152	387	618	738	26	384	650	1751
15	395	584	1943	391	615	1945	15	388	645	1176	384	662	763	27	381	696	1777
16	392	624	1965	388	656	1968	16	384	688	1201	381	707	789	28	378	743	1801
17	388	663	1987	385	697	1990	17	381	731	1235	378	751	814	29	374	790	1832
18	385	702	2008	381	738	2013	18	378	774	1248	375	796	839	30	371	836	1859
19	382	741	2029	378	779	2036	19	374	817	1273	371	840	866	1	368	883	1885
20	377	780	2052	374	820	2059	20	370	860	1298	367	885	892	2	364	929	1913
21	374	820	2073	370	861	2082	21	367	903	1322	364	929	917	3	360	973	1941
22	370	859	2095	366	902	2106	22	363	946	1351	360	974	944	4	358	1019	1966
23	368	898	2115	364	943	2127	23	361	989	1369	358	1018	968	5	356	1066	1992
24	366	937	2135	362	984	2148	24	359	1032	1392	356	1063	992	6	354	1113	2018
25	364	976	2155	360	1025	2166	25	357	1075	1415	354	1107	1016	7	352	1159	2043
26	362	1016	2176	358	1066	2191	26	355	1118	1438	352	1152	1041	8	350	1206	2061
27	360	1055	2196	356	1107	2212	27	353	1161	1461	350	1196	1065	9	348	1252	2095
28	358	1094	2216	354	1148	2233	28	351	1204	1483	349	1241	1088	10	347	1298	2120
29	356	1123	2236	352	1189	2255	29	349	1247	1506	348	1285	1114	11	346	1345	2144
30	354	1176	2256	350	1232	2276	30	347	1290	1529	347	1336	1135	12	345	1392	2169
31	352	1194	2276	348	1251	2297	1	346	1313	1545	346	1358	1158	13	344	1416	2194
32	350	1212	2296	347	1271	2318	2	345	1334	1573	345	1381	1182	14	343	1439	2218
33	348	1230	2316	346	1290	2338	3	344	1354	1594	344	1403	1205	15	342	1463	2219
34	347	1248	2335	345	1309	2358	4	343	1375	1616	340	1425	1231	16	338	1487	2247
35	341	1266	2359	339	1328	2383	5	337	1396	1643	335	1447	1258	17	332	1510	2277
36	335	1285	2384	333	1348	2409	6	331	1417	1670	329	1470	1287	18	326	1531	2307
37	329	1303	2408	327	1367	2434	7	325	1438	1697	323	1492	1315	19	321	1558	2359
38	324	1321	2431	322	1386	2458	8	320	1458	1722	317	1514	1343	20	315	1582	2389
39	317	1339	2456	316	1406	2484	9	313	1479	1750	311	1537	1372	21	309	1605	2418
40	311	1357	2480	309	1425	2510	10	307	1500	1777	305	1559	1400	22	303	1629	2448
41	305	1375	2503	303	1444	2537	11	301	1521	1803	299	1581	1429	23	297	1653	2479
42	298	1393	2499	296	1464	2534	12	294	1542	1800	292	1604	1427	24	290	1676	2478
43	292	1411	2494	290	1483	2530	13	288	1562	1797	286	1626	1424	25	284	1700	2475
44	285	1429	2491	283	1502	2527	14	282	1583	1793	280	1648	1421	26	278	1724	2473
45	278	1447	2487	277	1521	2523	15	275	1604	1791	273	1670	1419	27	271	1747	2471
46	272	1466	2482	270	1541	2519	16	268	1625	1788	267	1693	1416	28	265	1771	2469
47	265	1484	2478	263	1560	2516	17	261	1646	1785	259	1715	1416	29	258	1795	2468
48	258	1502	2474	256	1579	2513	18	254	1666	1783	253	1737	1413	30	251	1819	2466
49	251	1520	2471	249	1599	2510	19	248	1687	1779	246	1760	1411	31	244	1842	2464
50	244	1538	2467	242	1618	2507	20	241	1708	1777	239	1782	1409	1	237	1866	2463
51	237	1556	2463	235	1637	2504	21	234	1729	1774	232	1804	1407	2	230	1890	2462
52	229	1574	2460	228	1657	2501	22	226	1750	1772	225	1827	1405	3	223	1913	2461
53	222	1592	2457	220	1676	2499	23	219	1770	1770	217	1849	1404	4	216	1937	2459
54	214	1610	2454	213	1695	2496	24	212	1791	1767	210	1871	1402	5	209	1961	2458
55	207	1628	2450	206	1714	2493	25	204	1812	1766	203	1893	1400	6	201	1984	2457
56	200	1647	2446	198	1734	2490	26	197	1833	1763	196	1916	1398	7	194	2008	2456
57	192	1665	2443	190	1753	2488	27	189	1854	1761	188	1938	1398	8	186	2032	2456
58	188	1683	2436	186	1772	2482	28	184	1874	1757	183	1960	1394	9	182	2056	2451
59	184	1701	2430	182	1792	2476	29	180	1895	1751	179	1983	1389	10	178	2079	2447
60	180	1719	2423	178	1811	2470	30	176	1916	1746	175	2005	1384	11	174	2103	2442
61	176	1736	2416	174	1832	2464	31	172	1936	1740	171	2028	1379	12	171	2128	2437
62	172	1725	2409	170	1822	2458	32	168	1926	1734	167	2019	1374	13	167	2120	2433

Days of Solar months 1–30 (rows 1–30): *Tamil*, Chittirai; *Malayalam*, Medam; *Bengal*, Vaisakha.

Days of Solar months 1–32 (rows 31–62): *Tamil*, Vaikasi; *Malayalam*, Edavam; *Bengal*, Jyeshta.

Eng. date: April (rows 1–18), May (rows 19–49), June (rows 50–62).

TABLE XIII.

Sunrise from 13° to 17° N. Latitude.

Days of Solar months 1–32 (Day of Solar year 63–94): Tamil, Ani; Malayalam, Mithunum; Bengal, Ashada.

Days of Solar months 1–31 (Day of Solar year 95–124): Tamil, Adi; Malayalam, Karkatagam; Bengal, Sravana.

Eng. date: June 14–30; July 1–31; August 1–15.

Day of Solar year.	Lat. 13° +1072″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Madras.** A.D. 1840—1920	Lat. 14° +1008″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Nellore.** A.D. 1840—1920	Days of Solar months.	Lat. 15° +168″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Vijianagaram.** A.D. 1840—1920	Lat. 16° —300″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Belgaum.** A.D. 1840—1920	Eng. date.	Lat. 17° +648″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Hyderabad.** A.D. 1840—1920
63	−164	+1714	+2406	−164	+1812	+2454	1	−164	+1917	+1729	−163	+2010	+1369	14	−163	+2111	+2428
64	155	1704	2405	155	1802	2453	2	155	1907	1728	154	2001	1369	15	154	2103	2429
65	146	1693	2403	146	1792	2452	3	146	1898	1728	145	1992	1369	16	145	2094	2429
66	137	1682	2401	137	1781	2450	4	137	1888	1727	136	1983	1369	17	136	2086	2430
67	128	1671	2399	128	1771	2449	5	127	1878	1727	126	1975	1371	18	127	2078	2431
68	119	1660	2397	119	1761	2448	6	118	1869	1727	118	1966	1370	19	118	2069	2431
69	109	1650	2397	109	1751	2448	7	109	1859	1626	109	1957	1370	20	108	2060	2433
70	100	1639	2395	100	1741	2447	8	100	1850	1727	99	1948	1371	21	99	2052	2432
71	91	1628	2393	91	1731	2445	9	90	1840	1726	90	1939	1370	22	90	2044	2434
72	81	1617	2379	81	1721	2430	10	81	1830	1709	81	1930	1353	23	80	2036	2417
73	72	1606	2363	72	1711	2414	11	71	1821	1694	71	1921	1337	24	71	2027	2400
74	62	1596	2349	62	1701	2399	12	62	1811	1677	62	1912	1319	25	62	2019	2382
75	54	1585	2332	54	1691	2382	13	54	1802	1660	54	1903	1301	26	54	2010	2363
76	43	1574	2319	43	1680	2368	14	43	1792	1645	43	1894	1286	27	43	2002	2347
77	34	1563	2304	33	1670	2353	15	33	1782	1630	33	1886	1270	28	33	1994	2331
78	24	1552	2289	24	1660	2337	16	24	1773	1613	24	1877	1253	29	24	1985	2313
79	15	1542	2274	15	1650	2321	17	15	1763	1597	15	1868	1235	30	15	1977	2295
80	5	1531	2259	5	1640	2306	18	5	1754	1581	5	1859	1219	1	5	1968	2279
81	+ 4	1520	2244	+ 4	1630	2290	19	+ 4	1744	1565	+ 4	1850	1202	2	+ 4	1960	2261
82	14	1509	2230	14	1620	2275	20	14	1734	1549	14	1841	1186	3	14	1952	2244
83	23	1498	2214	23	1610	2259	21	23	1725	1533	23	1832	1169	4	23	1943	2227
84	33	1488	2200	33	1600	2244	22	33	1715	1517	33	1823	1152	5	33	1935	2220
85	43	1477	2185	43	1590	2229	23	42	1706	1501	42	1814	1135	6	42	1926	2192
86	52	1466	2170	52	1579	2213	24	52	1696	1485	52	1805	1119	7	51	1918	2174
87	61	1455	2155	61	1569	2197	25	61	1686	1469	61	1797	1102	8	61	1910	2158
88	71	1444	2140	71	1559	2182	26	71	1677	1453	70	1788	1085	9	70	1901	2140
89	80	1434	2125	80	1549	2166	27	80	1667	1437	80	1779	1068	10	80	1893	2123
90	90	1423	2110	89	1539	2150	28	89	1658	1420	89	1770	1051	11	89	1884	2106
91	105	1412	2101	105	1528	2141	29	105	1648	1411	105	1760	1041	12	106	1876	2096
92	115	1388	2087	115	1503	2126	30	115	1622	1395	116	1734	1026	13	116	1849	2079
93	124	1363	2071	125	1478	2111	31	125	1597	1380	125	1708	1109	14	126	1823	2063
94	134	1339	2063	134	1453	2095	32	135	1571	1364	135	1681	992	15	135	1796	2045
95	144	1314	2042	144	1428	2080	1	144	1546	1348	145	1655	976	16	145	1769	2028
96	154	1290	2028	154	1403	2065	2	154	1520	1332	155	1629	960	17	155	1742	2011
97	163	1266	2013	164	1378	2050	3	164	1495	1317	164	1603	943	18	165	1716	1995
98	173	1241	1998	173	1353	2034	4	174	1469	1301	174	1577	927	19	174	1689	1977
99	183	1217	1984	183	1328	2019	5	183	1444	1285	184	1550	910	20	184	1662	1960
100	192	1192	1968	192	1303	2003	6	193	1418	1269	193	1524	893	21	193	1636	1943
101	201	1168	1953	202	1278	1988	7	202	1393	1253	202	1498	876	22	203	1609	1926
102	210	1144	1938	211	1253	1971	8	211	1367	1235	212	1472	860	23	212	1582	1908
103	220	1119	1931	220	1228	1961	9	221	1342	1224	221	1446	847	24	222	1556	1895
104	229	1095	1922	230	1203	1953	10	230	1316	1213	231	1419	836	25	231	1539	1881
105	238	1070	1914	239	1178	1943	11	239	1291	1202	240	1393	823	26	240	1502	1866
106	247	1046	1906	248	1153	1933	12	248	1265	1191	249	1367	810	27	249	1475	1852
107	256	1022	1897	257	1128	1923	13	257	1240	1179	258	1341	797	28	258	1449	1838
108	266	997	1890	266	1103	1914	14	266	1214	1168	267	1315	785	29	267	1422	1824
109	274	973	1881	274	1078	1903	15	275	1189	1157	276	1288	772	30	276	1395	1810
110	283	948	1873	283	1053	1893	16	284	1163	1146	285	1262	759	31	285	1369	1795
111	291	924	1863	292	1028	1884	17	292	1138	1133	293	1236	746	1	294	1342	1781
112	300	900	1855	300	1003	1873	18	301	1112	1122	301	1210	732	2	302	1315	1766
113	308	875	1846	309	978	1863	19	309	1087	1110	310	1184	719	3	311	1289	1752
114	317	857	1837	318	953	1854	20	318	1061	1098	319	1157	707	4	320	1262	1738
115	325	826	1828	326	928	1843	21	326	1036	1086	327	1131	693	5	328	1235	1722
116	333	802	1819	334	903	1832	22	334	1010	1074	335	1105	679	6	336	1208	1707
117	341	778	1809	342	878	1821	23	342	985	1061	343	1079	665	7	344	1182	1692
118	349	753	1800	350	853	1811	24	351	959	1050	352	1053	653	8	352	1155	1677
119	356	729	1790	355	828	1797	25	356	934	1035	358	1026	637	9	368	1128	1670
120	360	704	1777	360	803	1783	26	361	908	1020	363	1000	620	10	364	1102	1642
121	364	680	1755	365	778	1770	27	366	883	1004	369	974	605	11	370	1075	1625
122	368	656	1750	370	752	1756	28	372	856	990	375	948	589	12	377	1048	1609
123	375	639	1740	377	733	1744	29	379	835	977	382	926	574	13	384	1025	1593
124	382	621	1729	385	715	1734	30	387	815	964	389	905	560	14	391	1002	1577
				391	696	1721	31	394	795	951	396	883	545	15	398	978	1559

TABLE XIII.

Sunrise from 13° to 17° N. Latitude.

Day of Solar year.	Lat. 13° +1072″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Madras.** A.D. 1840—1920	Lat. 14° +1008″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Nellore.** A.D. 1840—1920	Solar months	Days of solar months.	Lat. 15° +168″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Vizianagaram.** A.D. 1840—1920	Lat. 16° —300″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Belgaum.** A.D. 1840—1920	Eng. month	**Eng. date.**	Lat 17° +648″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Hyderabad.** A.D. 1840—1920
126	+396	+587	+1709	+398	+677	+1709	*Tamil*, Avani; *Malayalam*, Chingam; *Bengal*, Bhadrapada.	1	+401	+775	+938	+403	+861	+530	August	**16**	+405	+955	+1544
127	403	569	1698	405	658	1697		2	408	754	924	410	839	515		**17**	412	932	1528
128	409	552	1687	412	640	1686		3	414	734	910	416	818	500		**18**	419	909	1512
129	416	535	1677	418	621	1673		4	421	714	897	423	796	485		**19**	425	886	1495
130	422	518	1666	425	602	1661		5	427	694	883	430	774	470		**20**	432	862	1478
131	428	500	1654	431	584	1649		6	433	673	868	436	753	445		**21**	438	839	1461
132	434	483	1642	437	565	1637		7	439	653	855	442	731	438		**22**	444	816	1444
133	440	466	1644	443	546	1637		8	446	633	854	448	709	434		**23**	451	793	1440
134	416	448	1645	449	528	1637		9	451	612	851	454	688	431		**24**	457	770	1434
135	452	431	1647	454	509	1635		10	457	592	849	460	666	427		**25**	462	746	1428
136	457	414	1647	460	490	1635		11	463	572	847	465	644	423		**26**	468	723	1423
137	462	396	1648	465	471	1634		12	468	551	844	471	622	419		**27**	474	700	1417
138	468	379	1650	471	453	1634		13	474	531	842	476	601	415		**28**	479	677	1411
139	473	362	1650	476	434	1633		14	479	511	839	482	579	411		**29**	485	654	1406
140	478	345	1651	481	415	1631		15	484	491	836	487	557	407		**30**	489	630	1399
141	483	327	1651	486	397	1630		16	489	470	833	492	536	402		**31**	494	607	1392
142	488	310	1652	491	378	1629		17	494	450	830	496	514	397	September	**1**	499	584	1386
143	492	293	1652	495	359	1627		18	498	430	826	501	492	392		**2**	504	561	1380
144	497	275	1652	500	341	1626		19	503	409	823	506	471	388		**3**	509	538	1373
145	501	258	1652	504	322	1623		20	507	389	819	510	449	382		**4**	514	513	1367
146	505	241	1651	508	303	1621		21	511	369	815	514	427	371		**5**	517	491	1359
147	509	223	1651	512	284	1619		22	516	348	812	518	405	371		**6**	521	468	1351
148	513	206	1651	517	266	1618		23	520	328	808	523	384	367		**7**	526	445	1345
149	517	189	1650	520	247	1615		24	523	308	803	526	362	360		**8**	529	422	1337
150	520	172	1649	524	228	1612		25	527	288	799	530	340	355		**9**	533	398	1330
151	523	154	1647	527	210	1609		26	530	267	794	533	319	348		**10**	536	375	1321
152	501	136	1621	505	192	1581		27	508	248	764	512	296	318		**11**	516	352	1290
153	504	132	1620	508	186	1578		28	512	240	760	515	286	311		**12**	519	341	1282
154	507	127	1618	511	180	1575		29	515	232	755	518	277	305		**13**	522	329	1273
155	510	123	1617	514	173	1571		30	518	224	750	527	267	304		**14**	525	318	1265
156	512	118	1614	516	167	1567		31	520	216	744	523	258	291		**15**	527	307	1256
157	514	114	1612	518	161	1563	*Tamil*, Purattasi; *Malayalam*, Kanni; *Bengal*, Asvina.	1	522	208	738	525	248	283		**16**	529	295	1246
158	517	110	1611	521	155	1560		2	525	200	733	528	239	277		**17**	532	284	1238
159	519	105	1608	523	149	1556		3	527	192	727	530	229	269		**18**	534	273	1229
160	521	101	1606	525	142	1551		4	529	184	721	532	220	262		**19**	536	262	1220
161	523	96	1603	527	136	1547		5	531	176	715	534	210	254		**20**	538	250	1210
162	524	92	1600	528	130	1542		6	532	168	708	535	201	246		**21**	539	239	1200
163	525	88	1597	529	124	1537		7	533	160	701	537	191	237		**22**	541	228	1189
164	527	83	1595	531	118	1533		8	535	152	695	538	182	228		**23**	543	216	1179
165	528	79	1591	532	111	1527		9	536	144	687	539	172	219		**24**	543	205	1168
166	528	74	1588	532	105	1521		10	536	136	679	540	163	210		**25**	544	194	1157
167	529	70	1584	533	99	1515		11	536	128	671	541	153	201		**26**	545	182	1146
168	530	66	1580	534	93	1510		12	538	120	665	542	144	193		**27**	546	171	1136
169	531	61	1576	535	87	1505		13	539	112	657	542	134	183		**28**	547	160	1125
170	531	57	1572	535	80	1498		14	539	104	649	543	125	174		**29**	547	149	1113
171	531	52	1567	536	74	1493		15	540	96	642	543	115	164		**30**	547	137	1101
172	531	48	1563	536	68	1486		16	540	88	633	543	106	154	October	**1**	547	126	1090
173	531	44	1558	536	62	1480		17	540	80	625	543	96	144		**2**	547	115	1078
174	531	39	1554	535	56	1473		18	539	72	616	543	87	134		**3**	547	103	1066
175	531	35	1549	535	49	1466		19	539	64	608	542	77	123		**4**	547	92	1055
176	531	30	1545	535	43	1460		20	539	56	599	542	68	113		**5**	546	81	1042
177	530	26	1539	534	37	1452		21	538	48	590	541	58	102		**6**	545	69	1029
178	529	22	1534	533	31	1445		22	537	40	581	540	49	92		**7**	544	58	1017
179	528	17	1528	532	25	1438		23	536	32	571	539	39	81		**8**	543	47	1004
180	527	13	1523	531	18	1430		24	535	24	562	538	30	70		**9**	543	36	992
181	525	8	1516	529	12	1422		25	533	16	552	536	20	58		**10**	541	24	978
182	524	4	1511	528	8	1414		26	532	8	542	535	11	47		**11**	540	13	966
183	522	0	1504	526	0	1406		27	530	0	532	534	0	36		**12**	538	0	952
184	521	— 4	1499	525	— 6	1399		28	529	— 8	523	533	—10	25		**13**	537	—12	939
185	519	9	1492	523	13	1390		29	527	17	512	531	20	13		**14**	535	23	926
186	517	13	1486	521	19	1382		30	525	25	502	529	30	1		**15**	533	35	912

TABLE XIII.

Sunrise from 13° to 17° N. Latitude.

Day of Solar year.	Lat. 13° +1072″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Madras. A.D. 1840–1920	Lat. 14° +1008″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Nellore. A.D. 1840–1920	Days of solar months.	Lat. 15° +168″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Vizianagaram. A.D. 1840–1920	Lat. 16° —300″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Belgaum. A.D. 1840–1920	Eng. date.	Lat. 17° +648″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Hyderabad. A.D. 1840–1920
187	+515	—18	+1479	+519	—26	+1373	1	+523	—33	+492	+527	—40	—11	**16**	+531	—47	+898
188	513	22	1473	517	32	1365	2	521	41	482	525	49	22	**17**	529	58	885
189	510	27	1465	514	38	1356	3	518	50	470	522	59	35	**18**	526	70	870
190	507	31	1458	511	45	1346	4	515	58	459	519	69	48	**19**	523	82	855
191	504	36	1450	508	51	1337	5	512	66	448	516	79	61	**20**	520	94	840
192	501	40	1443	505	58	1327	6	509	75	436	513	89	74	**21**	517	105	826
193	498	45	1434	502	64	1318	7	506	83	426	510	99	86	**22**	514	117	810
194	495	49	1414	499	70	1296	8	503	91	403	507	109	111	**23**	511	129	784
195	492	54	1393	496	77	1275	9	500	99	379	504	119	135	**24**	508	140	758
196	488	58	1372	492	83	1252	10	496	108	355	500	129	161	**25**	504	152	730
197	484	63	1351	488	90	1229	11	492	116	331	496	139	187	**26**	500	164	703
198	480	67	1330	484	96	1207	12	488	124	307	492	148	212	**27**	496	175	676
199	476	72	1308	480	102	1184	13	484	133	282	488	158	238	**28**	492	187	649
200	472	76	1287	476	109	1161	14	479	141	257	483	163	265	**29**	487	199	621
201	468	81	1266	472	115	1138	15	475	149	233	479	178	291	**30**	483	211	593
202	464	85	1244	468	122	1116	16	471	158	208	475	188	316	**31**	479	222	566
203	459	90	1222	463	128	1092	17	466	166	183	470	198	343	**1**	474	234	538
204	454	94	1200	458	134	1068	18	461	174	158	465	208	370	**2**	469	246	510
205	450	99	1178	454	141	1046	19	456	183	132	460	218	396	**3**	464	257	482
206	445	103	1156	449	147	1022	20	451	191	112	455	228	423	**4**	459	269	453
207	441	108	1135	445	154	999	21	447	199	83	451	238	449	**5**	455	281	426
208	436	112	1113	440	160	976	22	442	207	58	446	247	475	**6**	450	292	398
209	430	117	1089	434	166	951	23	436	216	31	440	257	503	**7**	444	304	369
210	425	121	1067	429	173	927	24	431	224	6	433	267	532	**8**	439	316	341
211	417	126	1042	423	179	902	25	425	232	—20	429	277	558	**9**	433	328	311
212	411	130	1018	417	186	878	26	419	241	47	423	287	585	**10**	427	339	282
213	428	136	1018	431	192	873	27	433	248	53	436	296	594	**11**	438	352	270
314	422	153	995	425	211	848	28	427	268	79	430	318	622	**12**	432	375	241
215	415	171	970	418	229	823	29	420	289	107	423	339	650	**13**	425	398	211
216	408	188	946	411	248	797	30	413	309	134	416	361	679	**14**	418	422	180
217	401	205	922	404	267	771	1	406	329	161	409	383	708	**15**	411	445	150
218	394	222	906	397	285	746	2	399	349	188	402	404	736	**16**	404	468	120
219	387	240	873	390	304	720	3	392	370	216	395	426	765	**17**	397	491	90
220	380	257	849	383	323	692	4	385	390	243	388	448	794	**18**	390	514	60
221	373	274	825	376	342	668	5	378	410	270	381	470	823	**19**	383	538	29
222	366	292	800	369	360	643	6	371	431	298	374	491	851	**20**	376	561	—1
223	359	309	775	362	379	618	7	364	451	324	367	513	881	**21**	369	584	31
224	352	326	744	354	398	585	8	356	471	357	359	535	915	**22**	361	607	66
225	345	344	712	346	416	552	9	348	492	391	351	556	949	**23**	353	630	100
226	338	361	681	338	435	519	10	340	512	424	343	578	984	**24**	345	654	135
227	330	378	648	330	454	486	11	332	532	458	335	600	1018	**25**	337	677	170
228	323	395	617	322	472	453	12	324	552	491	327	621	1052	**26**	329	700	204
229	315	413	585	314	491	420	13	316	573	525	319	643	1086	**27**	321	723	239
230	307	430	552	306	510	387	14	307	593	559	310	665	1121	**28**	312	746	275
231	299	447	520	298	529	354	15	299	613	593	302	687	1156	**29**	304	770	310
232	291	465	487	290	547	321	16	291	634	626	294	708	1190	**30**	296	793	344
233	283	482	455	282	566	288	17	283	654	660	286	730	1224	**1**	288	816	379
234	274	499	422	273	585	254	18	274	674	694	277	752	1259	**2**	279	839	415
235	266	517	389	265	603	221	19	265	695	729	268	773	1294	**3**	270	862	450
236	258	534	357	257	622	188	20	256	715	763	259	795	1330	**4**	261	886	486
237	250	551	324	249	641	155	21	247	735	798	250	817	1365	**5**	252	909	522
238	241	568	291	240	659	121	22	238	755	832	241	838	1400	**6**	243	932	557
239	232	586	258	231	678	87	23	229	776	867	232	860	1435	**7**	234	955	593
240	224	603	225	223	699	54	24	220	796	901	223	882	1470	**8**	225	978	629
241	215	620	192	214	716	20	25	211	816	936	213	904	1507	**9**	215	1002	666
242	206	638	158	205	734	—14	26	202	837	970	204	925	1542	**10**	206	1025	701
243	200	656	128	200	752	44	27	201	856	997	201	948	1571	**11**	202	1048	782
244	191	680	95	191	777	78	28	192	881	1031	192	974	1606	**12**	193	1075	768
245	181	705	60	181	802	113	29	182	907	1067	182	1000	1642	**13**	183	1101	804
246	171	729	26	171	827	148	30	172	932	1102	172	1027	1679	**14**	173	1128	841

Days of solar months 1–30 (first set): *Tamil*, Aippasi; *Malayalam*, Tulam; *Bengal*, Kartika.

Days of solar months 1–30 (second set): *Tamil*, Kartikai; *Malayalam*, Vrischikam; *Bengal*, Margasira.

Eng. date: October (16–31), November (1–30), December (1–14).

TABLE XIII.

Sunrise from 13° to 17° N. Latitude.

Day of Solar year.	Lat. 13° +1072″ Long.: Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Madras. A.D. 1840—1920	Lat. 14° +1008″ Long.: Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Nellore. A.D. 1840—1920	Days of solar months.	Lat. 15° +168″ Long.: Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Vizianagaram. A.D. 840—1920	Lat. 16° —300″ Long.: Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Belgaum. A.D. 1840—1920	Eng. date.	Lat. 17° +648″ Long.: Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Hyderabad. A.D. 1840—1920
247	+161	—754	— 9	+161	—852	—183	1 (Tamil, Margali; Malayalam, Dhanus; Bengal, Pausha.)	+162	—958	—1138	+162	—1053	—1715	**15** (December.)	+163	—1155	—878
248	151	778	43	151	877	218	2	152	983	1173	152	1079	1751	**16**	153	1181	914
249	141	802	77	141	902	253	3	142	1009	1209	142	1105	1787	**17**	143	1208	951
250	131	827	112	131	927	288	4	132	1034	1244	132	1131	1823	**18**	133	1235	988
251	121	851	146	121	952	323	5	122	1060	1280	122	1158	1860	**19**	123	1262	1025
252	111	876	181	111	977	358	6	112	1085	1315	112	1184	1896	**20**	113	1288	1061
253	101	900	215	101	1002	393	7	102	1111	1351	102	1210	1932	**21**	103	1315	1098
254	91	924	249	91	1027	429	8	92	1136	1388	92	1236	1968	**22**	93	1342	1135
255	81	949	270	81	1052	449	9	82	1162	1408	82	1262	1987	**23**	83	1368	1158
256	71	973	291	71	1077	469	10	72	1187	1427	72	1289	2006	**24**	73	1395	1172
257	61	998	311	61	1102	489	11	62	1213	1447	62	1315	2025	**25**	63	1422	1190
258	51	1022	332	51	1127	509	12	52	1238	1466	52	1341	2044	**26**	53	1448	1209
259	41	1046	353	41	1152	529	13	42	1264	1486	42	1367	2062	**27**	43	1475	1227
260	31	1071	374	31	1177	550	14	32	1289	1506	32	1393	2081	**28**	33	1502	1245
261	21	1095	395	21	1202	570	15	22	1315	1525	22	1420	2100	**29**	23	1529	1264
262	11	1120	415	11	1227	590	16	12	1340	1545	12	1446	2119	**30**	13	1555	1282
263	2	1144	436	2	1252	610	17	2	1366	1564	2	1472	2138	**31**	2	1582	1301
264	—10	1168	457	—10	1277	630	18	—10	1391	1586	—10	1498	2159	**1** (January.)	—10	1609	1323
265	20	1193	478	20	1302	650	19	20	1417	1606	20	1524	2178	**2**	20	1635	1341
266	29	1217	499	29	1327	670	20	30	1442	1625	30	1551	2197	**3**	31	1662	1362
267	38	1242	518	38	1352	689	21	39	1468	1644	39	1577	2215	**4**	40	1689	1377
268	48	1266	539	48	1377	709	22	49	1493	1663	49	1603	2234	**5**	50	1715	1396
269	58	1290	560	58	1402	729	23	59	1519	1683	59	1629	2252	**6**	60	1742	1414
270	67	1315	580	67	1427	749	24	68	1544	1702	68	1655	2270	**7**	69	1769	1431
271	78	1339	602	78	1452	770	25	79	1570	1722	79	1682	2290	**8**	80	1796	1451
272	88	1364	622	88	1477	790	26	89	1595	1742	89	1708	2309	**9**	90	1822	1469
273	98	1388	643	98	1502	810	27	99	1621	1761	99	1734	2328	**10**	100	1849	1488
274	103	1412	659	103	1528	825	28	103	1648	1775	103	1760	2341	**11**	102	1876	1498
275	110	1423	677	110	1538	842	29	109	1658	1791	110	1769	2357	**12**	109	1884	1513
276	117	1434	695	117	1548	859	1 (Tamil, Tai; Malayalam, Magaram; Bengal, Magha.)	116	1667	1807	117	1778	2373	**13**	116	1893	1529
277	124	1444	712	124	1558	876	2	122	1677	1823	124	1787	2389	**14**	123	1901	1544
278	131	1455	730	131	1568	893	3	129	1686	1839	131	1796	2405	**15**	130	1910	1560
279	138	1466	748	139	1578	911	4	135	1696	1855	138	1804	2420	**16**	137	1918	1575
280	145	1477	766	146	1589	929	5	142	1706	1872	145	1813	2436	**17**	144	1926	1590
281	152	1488	784	153	1599	946	6	148	1715	1887	152	1822	2452	**18**	151	1935	1606
282	159	1498	801	160	1609	963	7	155	1725	1904	159	1831	2468	**19**	158	1943	1621
283	166	1509	819	167	1619	980	8	161	1734	1919	166	1840	2484	**20**	165	1952	1637
284	173	1520	837	175	1629	999	9	168	1744	1936	173	1849	2501	**21**	172	1960	1652
285	180	1531	826	182	1639	987	10	174	1754	1921	180	1858	2486	**22**	179	1968	1635
286	187	1542	815	189	1649	974	11	181	1763	1907	187	1867	2470	**23**	186	1979	1619
287	194	1552	804	196	1659	960	12	187	1773	1893	194	1876	2455	**24**	193	1985	1602
288	201	1563	793	203	1669	950	13	194	1782	1879	201	1885	2440	**25**	200	1994	1585
289	208	1574	781	211	1679	938	14	200	1792	1864	208	1893	2424	**26**	207	2002	1568
290	215	1585	770	218	1690	928	15	207	1802	1850	215	1902	2409	**27**	214	2010	1552
291	222	1596	759	225	1700	914	16	213	1811	1835	222	1911	2394	**28**	221	2019	1535
292	229	1606	748	232	1710	902	17	220	1821	1822	229	1920	2379	**29**	228	2027	1518
293	236	1617	737	239	1720	889	18	227	1830	1808	236	1929	2363	**30**	235	2036	1502
294	243	1628	726	247	1730	878	19	235	1840	1795	243	1938	2348	**31**	242	2044	1485
295	250	1639	715	254	1740	866	20	242	1850	1781	249	1947	2332	**1** (February.)	248	2052	1467
296	257	1650	704	261	1750	853	21	249	1859	1767	256	1956	2316	**2**	255	2061	1451
297	264	1660	693	268	1760	841	22	257	1869	1755	262	1965	2300	**3**	261	2069	1433
298	271	1671	682	275	1770	829	23	264	1878	1741	269	1974	2285	**4**	268	2078	1416
299	278	1682	670	283	1780	817	24	272	1888	1728	276	1982	2269	**5**	274	2086	1398
300	285	1693	659	290	1791	805	25	279	1898	1714	282	1991	2253	**6**	280	2094	1381
301	292	1704	648	297	1801	793	26	287	1907	1701	289	2000	2238	**7**	286	2103	1346
302	299	1714	637	304	1811	781	27	294	1917	1688	295	2009	2222	**8**	293	2111	1363
303	307	1725	627	311	1821	768	28	302	1926	1675	302	2018	2206	**9**	300	2120	1330
304	315	1736	617	319	1832	757	29	310	1936	1662	308	2028	2190	**10**	306	2128	1312
305	318	1718	602	322	1813	741	30	313	1915	1644	311	2006	2171	**11**	309	2104	1291

TABLE XIII.

Sunrise from 13° to 17° N. Latitude.

Day of Solar year.	Lat. 13° +1072″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Madras. A.D. 1840—1920	Lat. 14° +1008″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Nellore. A.D. 1840—1920	Solar months	Days of solar months.	Lat. 15° +168″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Vizianagaram. A.D. 1840—1920	Lat. 16° −300″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Belgaum. A.D. 1840—1920	Eng. month	Eng. date.	Lat. 17° +648″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Hyderabad. A.D. 1840—1920
306	−321	−1700	−587	−325	−1793	−724	*Tamil*, Masi; *Malayalam*, Kumbam; *Bengal*, Phalguna.	1	−316	−1894	−1626	−314	−1983	−2151	February	**12**	−312	−2081	−1271
307	324	1682	572	328	1774	708		2	319	1874	1604	317	1961	2132		**13**	315	2057	1250
308	327	1664	557	331	1755	692		3	322	1853	1591	320	1939	2113		**14**	318	2033	1229
309	330	1645	541	334	1735	675		4	325	1832	1571	323	1916	2093		**15**	321	2009	1208
310	333	1627	526	337	1716	659		5	328	1811	1555	326	1894	2074		**16**	324	1986	1188
311	336	1609	511	340	1697	643		6	331	1790	1539	329	1872	2055		**17**	327	1962	1167
312	339	1591	496	343	1678	727		7	334	1770	1520	332	1850	2036		**18**	330	1938	1146
313	342	1573	481	346	1658	610		8	337	1749	1501	334	1827	2015		**19**	333	1915	1126
314	345	1555	466	349	1639	594		9	340	1728	1548	337	1805	1996		**20**	336	1891	1105
315	348	1537	452	352	1620	576		10	343	1707	1467	340	1783	1976		**21**	339	1867	1083
316	351	1519	416	355	1600	538		11	346	1686	1427	343	1760	1934		**22**	342	1844	1040
317	354	1501	380	358	1581	500		12	349	1666	1387	346	1738	1893		**23**	345	1820	996
318	357	1483	343	361	1562	462		13	352	1645	1347	349	716	1851		**24**	348	1796	953
319	360	1464	307	364	1542	424		14	355	1624	1307	352	1693	1810		**25**	351	1772	949
320	363	1446	271	367	1523	386		15	358	1603	1267	355	1671	1768		**26**	354	1749	865
321	366	1428	235	370	1504	348		16	361	1582	1227	358	1649	1727		**27**	357	1725	823
322	369	1410	199	373	1485	310		17	364	1562	1187	361	1627	1685		**28**	360	1701	779
323	372	1392	162	376	1465	272		18	367	1541	1147	364	1604	1644	March	**1**	364	1678	737
324	375	1374	126	380	1446	235		19	370	1520	1107	367	1582	1602		**2**	367	1654	694
325	378	1356	90	383	1427	197		20	373	1499	1067	370	1560	1561		**3**	370	1630	650
326	381	1338	54	386	1407	159		21	376	1478	1027	373	1537	1539		**4**	374	1607	608
327	384	1320	18	389	1388	121		22	379	1458	987	376	1515	1478		**5**	377	1583	564
328	387	1302	+19	392	1369	83		23	382	1437	947	379	1493	1436		**6**	380	1559	521
329	390	1283	57	395	1349	45		24	385	1416	907	382	1470	1395		**7**	383	1535	477
330	393	1265	91	398	1330	7		25	388	1395	867	385	1448	1353		**8**	386	1512	434
331	396	1247	127	401	1311	+31		26	391	1374	827	388	1426	1312		**9**	389	1488	391
332	400	1229	162	404	1292	69		27	394	1354	788	391	1404	1270		**10**	392	1464	347
333	404	1211	198	406	1272	108		28	398	1333	748	395	1381	1230		**11**	395	1441	304
334	408	1193	235	408	1253	147		29	402	1312	710	399	1359	1179		**12**	397	1417	259
335	413	1176	267	410	1232	186	*Tamil*, Panguni; *Malayalam*, Meenam; *Bengal*, Chaitra.	1	406	1292	670	402	1336	1148		**13**	399	1392	215
336	413	1137	302	411	1191	224		2	407	1249	628	403	1291	1104		**14**	400	1346	170
337	414	1098	338	411	1150	261		3	407	1206	585	403	1247	1060		**15**	400	1299	123
338	414	1058	374	412	1109	299		4	408	1163	543	404	1202	1016		**16**	401	1253	78
339	415	1019	410	412	1068	336		5	408	1120	500	404	1158	981		**17**	401	1206	31
340	415	980	445	413	1027	374		6	409	1077	458	405	1113	928		**18**	402	1160	+0
341	416	941	481	413	986	411		7	409	1034	415	405	1069	884		**19**	402	1114	60
342	416	902	518	414	945	451		8	410	991	373	406	1024	840		**20**	403	1067	106
343	417	862	554	414	904	488		9	410	948	330	406	980	795		**21**	403	1021	143
344	417	823	591	415	863	530		10	411	905	286	407	935	752		**22**	404	974	198
345	418	784	630	416	822	570		11	411	862	243	407	891	707		**23**	404	928	244
346	418	745	667	416	781	609		12	412	819	201	408	846	663		**24**	405	882	289
347	419	706	705	417	740	649		13	412	776	158	408	802	619		**25**	405	835	336
348	419	666	743	417	699	688		14	413	733	116	409	757	576		**26**	406	789	381
349	420	627	781	418	658	728		15	413	690	73	409	713	531		**27**	406	742	428
350	420	588	818	418	617	767		16	414	647	31	410	668	488		**28**	407	696	473
351	421	549	858	419	576	809		17	414	604	+12	410	624	443		**29**	407	650	519
352	421	510	895	419	535	848		18	415	561	54	411	579	400		**30**	408	603	555
353	422	470	936	420	494	890		19	416	518	96	411	535	360		**31**	408	557	611
354	422	431	971	420	453	929		20	416	475	139	412	490	317	April	**1**	409	510	657
355	423	392	1011	421	412	973		21	417	432	181	413	446	273		**2**	409	464	703
356	423	353	1051	422	371	1015		22	418	389	223	413	401	229		**3**	410	418	748
357	424	314	1093	422	330	1058		23	418	346	266	414	357	185		**4**	410	371	795
358	424	274	1132	423	289	1100		24	419	303	308	414	312	141		**5**	411	325	840
359	425	235	1172	424	248	1142		25	419	260	351	415	268	97		**6**	412	278	886
360	426	196	1211	424	207	1185		26	420	217	393	416	223	54		**7**	413	232	931
361	427	157	1255	425	166	1227		27	421	174	435	417	179	10		**8**	414	186	977
362	428	118	1297	426	125	1271		28	422	131	477	418	134	+33		**9**	415	139	1023
363	429	79	1337	427	84	1313		29	423	88	519	419	89	77		**10**	416	92	1068
364	430	40	1379	428	41	1357		30	424	43	561	420	49	120		**11**	417	46	1114
365	432	0	1420	429	0	1399		31	425	0	603	421	10	164		**12**	418	00	1159

TABLE XIII.

Sunrise from 18° to 22° N. Latitude.

Day of Solar year.	Lat. 18° Eqn. of time in seconds.	Lat. 18° ⊙'s Trop. Long. in seconds.	Lat. 18° −428″ Long. Total Corrn. in seconds. Satara. A.D. 1840—1920	Lat. 19° Eqn. of time in seconds.	Lat. 19° ⊙'s Trop. Long. in seconds.	Lat. 19° −460″ Long. Total Corrn. in seconds. Poona. A.D. 1840—1920	Days of solar months.	Lat. 20° Eqn. of time in seconds.	Lat. 20° ⊙'s Trop. Long. in seconds.	Lat. 20° −476″ Long. Total Corrn. in seconds. Nasik. A.D. 1840—1920	Lat. 21° Eqn. of Time in seconds.	Lat. 21° ⊙'s Trop. Long. in seconds.	Lat. 21° +800″ Long. Total Corrn. in seconds. Nagpur. A.D. 1840—1920	Eng. date.	Lat. 22° Eqn. of Time in seconds.	Lat. 22° ⊙'s Trop. Long. in seconds.	Lat. 22° −616″ Long. Total Corrn. in seconds. Baroda. A.D. 1840—1920
1	−409	+ 48	+177	−405	+ 50	+185	1	−401	+ 52	+222	−397	+ 54	+1534	**13**	−393	+ 56	+160
2	407	96	227	403	100	237	2	399	104	277	395	107	1590	**14**	391	111	218
3	405	144	277	401	150	289	3	398	156	330	393	161	1646	**15**	389	167	276
4	404	193	327	400	200	340	4	396	208	384	392	215	1701	**16**	388	223	332
5	402	241	377	398	250	392	5	394	259	437	390	269	1757	**17**	386	278	390
6	400	289	427	396	300	444	6	392	311	491	388	323	1813	**18**	384	334	448
7	398	338	468	394	350	496	7	390	363	545	386	377	1869	**19**	382	390	505
8	396	386	528	392	400	548	8	388	425	599	384	431	1925	**20**	380	445	563
9	393	434	532	390	450	600	9	386	477	653	382	485	1981	**21**	375	501	621
10	391	483	629	387	500	653	10	383	529	697	379	539	2037	**22**	375	557	681
11	388	531	657	385	550	682	11	381	580	727	377	592	2069	**23**	373	612	714
12	386	579	684	382	600	711	12	378	632	758	374	646	2101	**24**	371	668	747
13	383	627	713	380	650	740	13	376	684	788	372	700	2133	**25**	368	724	782
14	380	676	741	377	700	770	14	373	736	819	369	754	2166	**26**	365	779	816
15	377	724	769	374	750	800	15	370	788	850	366	808	2198	**27**	362	835	850
16	374	772	797	371	800	829	16	367	840	882	363	862	2231	**28**	359	891	884
17	371	821	825	367	850	860	17	364	892	913	360	916	2264	**29**	356	946	918
18	367	869	855	364	900	890	18	361	944	944	357	970	2297	**30**	353	1002	953
19	364	917	883	361	950	919	19	357	996	976	353	1024	2330	**1**	350	1058	987
20	360	966	902	357	1000	950	20	354	1048	1007	350	1078	2363	**2**	346	1114	1022
21	357	1014	940	354	1050	980	21	350	1099	1039	346	1131	2397	**3**	343	1169	1056
22	353	1062	969	350	1100	1010	22	346	1152	1071	343	1185	2429	**4**	339	1225	1091
23	349	1110	999	346	1150	1041	23	342	1204	1103	339	1239	2463	**5**	335	1281	1127
24	346	1159	1027	342	1200	1072	24	339	1256	1134	335	1293	2497	**6**	332	1336	1161
25	341	1207	1057	338	1250	1102	25	335	1307	1166	331	1347	2530	**7**	328	1392	1196
26	337	1255	1086	334	1300	1133	26	331	1359	1199	327	1401	2964	**8**	324	1448	1231
27	333	1304	1115	330	1350	1164	27	327	1411	1231	323	1455	2598	**9**	320	1503	1266
28	329	1352	1145	326	1400	1195	28	323	1463	1263	319	1509	2632	**10**	316	1559	1302
29	324	1400	1175	322	1450	1225	29	318	1515	1296	315	1563	2665	**11**	312	1615	1337
30	357	1448	1167	354	1500	1220	30	352	1556	1290	349	1616	2661	**12**	346	1672	1334
31	352	1473	1197	349	1527	1252	1	347	1584	1328	344	1646	2696	**13**	342	1703	1369
32	346	1498	1228	344	1553	1283	2	342	1612	1356	339	1675	2730	**14**	336	1734	1406
33	341	1524	1259	339	1580	1315	3	336	1640	1390	334	1705	2765	**15**	331	1766	1442
34	336	1549	1289	333	1607	1348	4	331	1668	1423	328	1735	2801	**16**	326	1797	1479
35	330	1574	1320	328	1634	1379	5	325	1696	1457	323	1764	2835	**17**	320	1828	1516
36	324	1599	1351	322	1660	1412	6	320	1725	1491	317	1794	2871	**18**	315	1859	1552
37	319	1624	1381	316	1687	1445	7	314	1753	1525	312	1824	2906	**19**	309	1890	1589
38	313	1650	1413	311	1714	1477	8	309	1781	1558	306	1854	2942	**20**	304	1922	1626
39	307	1675	1444	305	1740	1509	9	303	1809	1592	300	1883	2977	**21**	298	1953	1663
40	301	1700	1475	299	1767	1542	10	296	1837	1627	294	1913	3013	**22**	292	1984	1700
41	295	1725	1505	293	1794	1575	11	291	1865	1661	288	1943	3048	**23**	286	2015	1738
42	288	1750	1504	286	1820	1575	12	284	1893	1662	282	1972	3048	**24**	280	2046	1739
43	282	1776	1503	280	1847	1574	13	278	1921	1661	276	2002	3048	**25**	274	2078	1740
44	276	1801	1501	274	1874	1572	14	272	1949	1661	270	2032	3048	**26**	268	2109	1740
45	270	1826	1499	267	1900	1573	15	265	1977	1661	263	2061	3049	**27**	261	2140	1742
46	263	1851	1499	261	1927	1571	16	259	2006	1661	257	2091	3049	**28**	255	2171	1743
47	256	1876	1498	254	1954	1571	17	252	2034	1662	250	2121	3051	**29**	248	2202	1745
48	249	1902	1498	247	1981	1571	18	246	2062	1662	244	2151	3051	**30**	242	2234	1746
49	243	1927	1496	241	2007	1570	19	239	2090	1662	237	2180	3052	**31**	236	2265	1746
50	236	1952	1496	234	2034	1570	20	332	2118	1662	230	2210	3053	**1**	229	2296	1748
51	229	1977	1495	227	2061	1570	21	226	2146	1662	224	2240	3053	**2**	222	2327	1750
52	222	2002	1494	220	2087	1570	22	219	2174	1663	217	2269	3054	**3**	215	2358	1752
53	214	2028	1495	213	2114	1570	23	211	2202	1664	210	2299	3055	**4**	208	2390	1754
54	207	2053	1494	206	2141	1570	24	204	2230	1665	203	2329	3056	**5**	201	2421	1755
55	200	2078	1494	199	2167	1568	25	197	2258	1665	196	2358	3057	**6**	194	2452	1757
56	193	2103	1493	192	2194	1569	26	190	2287	1666	189	2388	3058	**7**	187	2483	1759
57	185	2128	1493	184	2221	1570	27	183	2315	1667	181	2418	3061	**8**	180	2514	1761
58	178	2154	1493	177	2248	1570	28	175	2343	1668	174	2448	3062	**9**	173	2546	1763
59	170	2179	1493	169	2274	1571	29	168	2371	1669	167	2477	3063	**10**	165	2577	1765
60	163	2204	1493	162	2301	1571	30	161	2399	1669	159	2507	3065	**11**	158	2608	1767
61	180	2228	1468	179	2328	1547	31	179	2428	1645	179	2536	3039	**12**	178	2640	1742
62	171	2220	1487	171	2321	1548	32	170	2422	1648	170	2580	3042	**13**	169	2635	1746

Days of solar months 1–30 (days 1–30 of solar year): *Tamil*, Chittirai; *Malayalam*, Medam; *Bengal*, Vaisakha.

Days of solar months 1–32 (days 31–62 of solar year): *Tamil*, Vaikasi; *Malayalam*, Edavam; *Bengal*, Jyeshta.

Eng. date: April (13–30), May (1–31), June (1–13).

TABLE XIII.

Sunrise from 18° to 22° N. Latitude.

Day of Solar year.	Lat. 18° −428″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Satara. A.D. 1840—1920	Lat. 19° −460″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Poona. A.D. 1840—1920	Days of solar months.	Lat. 20° −476″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Nasik. A.D. 1840—1920	Lat. 21° +800″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Nagpur. A.D. 1840—1920	Eng. date.	Lat. 22° −616″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Baroda. A.D. 1840—1920
63	−162	+2213	+1471	−162	+2384	+1550	1	−162	+2415	+1649	−161	+2524	+3045	**14**	−161	+2630	+1749
64	153	2205	1472	153	2306	1552	2	153	2409	1652	152	2518	3048	**15**	152	2624	1752
65	145	2198	1473	144	2300	1554	3	144	2402	1654	144	2512	3050	**16**	143	2619	1756
66	135	2190	1475	135	2292	1555	4	135	2396	1657	135	2500	3053	**17**	134	2614	1760
67	126	2182	1476	126	2285	1557	5	126	2390	1660	126	2501	3057	**18**	125	2609	1764
68	117	2175	1478	117	2278	1559	6	117	2383	1662	117	2495	3060	**19**	116	2604	1768
69	108	2167	1479	108	2271	1561	7	107	2377	1666	107	2489	3064	**20**	107	2598	1771
70	99	2160	1481	99	2264	1563	8	98	2370	1668	98	2483	3067	**21**	98	2593	1775
71	90	2152	1482	89	2257	1567	9	89	2364	1671	89	2477	3071	June **22**	89	2588	1779
72	80	2144	1464	80	2250	1548	10	80	2358	1651	80	2471	3051	**23**	79	2583	1759
73	71	2137	1446	71	2243	1529	11	71	2351	1632	70	2465	3032	**24**	70	2578	1738
74	62	2129	1427	61	2236	1517	12	61	2345	1613	61	2459	3011	**25**	61	2572	1718
75	53	2122	1409	53	2227	1491	13	53	2338	1593	53	2453	2990	**26**	53	2567	1696
76	43	2114	1391	42	2221	1474	14	42	2332	1575	42	2447	2972	**27**	42	2562	1677
77	33	2106	1374	33	2214	1455	15	33	2326	1555	33	2442	2952	**28**	33	2557	1656
78	24	2099	1355	24	2207	1436	16	24	2319	1536	24	2436	2932	**29**	24	2552	1635
79	15	2091	1337	15	2200	1417	17	15	2313	1516	15	2430	2911	**30**	15	2546	1615
80	5	2084	1319	5	2193	1399	18	5	2306	1498	5	2424	2892	**1**	5	2541	1595
81	+ 4	2076	1301	+ 4	2186	1380	19	+ 4	2300	1478	+ 4	2418	2872	**2**	+ 4	2536	1574
82	14	2086	1283	13	2179	1361	20	13	2294	1458	13	2412	2852	**3**	13	2531	1553
83	23	2061	1265	23	2172	1348	21	23	2287	1440	23	2406	2833	**4**	23	2526	1533
84	33	2053	1247	32	2165	1324	22	32	2281	1420	32	2400	2812	**5**	32	2520	1513
85	42	2046	1229	42	2158	1306	23	42	2274	1402	42	2394	2793	**6**	42	2515	1493
86	51	2038	1210	51	2150	1287	24	51	2268	1382	51	2388	2773	**7**	51	2510	1472
87	60	2030	1192	60	2143	1268	25	60	2262	1362	60	2383	2753	**8**	60	2505	1451
88	70	2023	1174	70	2136	1250	26	70	2255	1344	69	2377	2733	**9**	69	2500	1430
89	79	2015	1156	79	2129	1239	27	79	2249	1324	79	2371	2713	**10**	79	2494	1411
90	88	2008	1137	88	2122	1212	28	88	2242	1305	88	2365	2693	**11**	88	2489	1390
91	106	2000	1128	106	2116	1202	29	106	2236	1294	107	2360	2683	**12**	107	2484	1379
92	116	1972	1110	116	2088	1184	30	117	2207	1276	117	2331	2664	**13**	117	2454	1359
93	126	1945	1093	126	2060	1166	31	126	2179	1257	127	2302	2645	**14**	127	2424	1339
94	136	1917	1075	136	2038	1148	32	136	2150	1238	137	2272	2625	**15**	137	2395	1320
95	146	1890	1058	146	2004	1130	1	146	2122	1220	146	2243	2605	July **16**	147	2365	1300
96	155	1862	1039	156	1976	1112	2	156	2093	1201	156	2214	2586	**17**	157	2335	1280
97	165	1835	1022	166	1948	1094	3	166	2064	1182	166	2185	2567	**18**	167	2305	1260
98	175	1807	1004	175	1920	1075	4	176	2036	1164	176	2156	2548	**19**	177	2275	1240
99	185	1780	987	185	1892	1057	5	186	2007	1145	186	2126	2528	**20**	187	2246	1221
100	194	1752	968	194	1864	1038	6	195	1979	1126	195	2097	2508	**21**	196	2216	1200
101	203	1725	950	204	1836	1020	7	204	1950	1106	205	2068	2489	**22**	205	2186	1179
102	213	1697	933	263	1808	1001	8	214	1921	1086	214	2039	2470	**23**	215	2156	1159
103	222	1670	917	223	1780	985	9	223	1893	1067	224	2010	2447	**24**	224	2126	1137
104	232	1642	903	232	1752	967	10	233	1864	1050	233	1980	2430	**25**	234	2097	1116
105	241	1615	887	242	1724	951	11	242	1836	1021	243	1951	2411	**26**	243	2067	1094
106	250	1587	871	251	1696	934	12	251	1867	1012	252	1922	2391	**27**	253	2037	1073
107	259	1560	855	260	1668	916	13	260	1778	993	261	1893	2370	**28**	261	2007	1050
108	268	1532	840	269	1640	899	14	269	1750	975	270	1864	2350	**29**	271	1977	1030
109	277	1505	825	278	1620	882	15	278	1721	956	279	1834	2330	**30**	280	1948	1008
110	286	1477	808	287	1584	865	16	287	1693	937	288	1805	2310	**31**	289	1918	986
111	294	1450	792	295	1556	846	17	296	1664	919	296	1776	2288	**1**	297	1888	963
112	303	1422	778	304	1528	829	18	305	1635	900	305	1747	2267	**2**	306	1858	941
113	312	1395	762	312	1500	811	19	313	1607	880	314	1718	2248	**3**	315	1828	919
114	321	1367	745	321	1472	793	20	322	1578	862	323	1688	2227	**4**	324	1799	897
115	329	1340	728	329	1444	775	21	330	1550	842	331	1659	2206	**5**	332	1769	874
116	337	1312	711	338	1416	758	22	339	1521	823	339	1630	2185	**6**	340	1739	851
117	345	1285	694	346	1388	739	23	346	1492	802	347	1601	2163	**7**	348	1709	828
118	353	1257	678	354	1360	721	24	354	1464	784	356	1572	2143	August **8**	357	1679	807
119	361	1230	661	362	1332	703	25	362	1435	763	363	1542	2121	**9**	364	1650	783
120	369	1202	644	369	1304	684	26	370	1407	743	371	1513	2100	**10**	372	1620	760
121	371	1175	622	373	1276	661	27	375	1378	721	377	1484	2076	**11**	379	1590	736
122	379	1148	605	381	1248	643	28	383	1348	701	385	1456	2055	**12**	387	1560	713
123	386	1123	587	388	1222	624	29	390	1320	680	393	1427	2034	**13**	395	1529	690
124	394	1099	571	396	1195	605	30	398	1293	661	401	1397	2012	**14**	403	1498	667
125	400	1074	552	403	1169	586	31	405	1265	640	407	1368	1989	**15**	410	1467	648

Days of solar months 1–32 (days 63–94): *Tamil*, Ani; *Malayalam*, Mithunam; *Bengal*, Ashada.

Days of solar months 1–31 (days 95–125): *Tamil*, Adi; *Malayalam*, Karkatagam; *Bengal*, Sravana.

TABLE XIII.

Sunrise from 18° to 22° N. Latitude.

Day of Solar year.	Lat. 18° −428″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Satara.** A.D. 1840—1920	Lat. 19° −460″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Poona.** A.D. 1840—1920	Solar month	Days of solar months.	Lat. 20° −476″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Nasik.** A.D. 1840—1920	Lat. 21° +800″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Nagpur.** A.D. 1840—1920	English month	**Eng. date.**	Lat. 22° −616″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Baroda.** A.D. 1840—1920
126	+408	+1049	+535	+410	+1143	+567	*Tamil,* Avani ; *Malayalam,* Chingam ; *Bengal,* Bhadrapada.	1	+412	+1237	+619	+415	+1339	+1968	August	**16**	+417	+1436	+619
127	415	1024	517	417	1116	547		2	419	1209	598	422	1309	1945		**17**	424	1405	595
128	421	1000	499	424	1090	528		3	426	1182	578	429	1280	1923		**18**	431	1375	572
129	428	975	481	430	1064	508		4	433	1154	557	435	1251	1900		**19**	438	1344	548
130	435	950	463	437	1038	489		5	440	1126	526	442	1222	1878		**20**	445	1313	524
131	441	926	445	443	1011	468		6	446	1099	515	447	1192	1853		**21**	451	1282	499
132	447	901	427	450	985	450		7	452	1071	492	455	1162	1831		**22**	457	1251	473
133	453	876	420	456	959	441		8	459	1043	482	461	1134	1818		**23**	464	1220	460
134	459	852	413	462	932	432		9	464	1016	471	467	1104	1806		**24**	470	1189	445
135	465	827	405	468	906	424		10	470	988	460	473	1075	1793		**25**	476	1158	431
136	471	802	398	474	880	415		11	476	960	450	479	1046	1781		**26**	482	1127	416
137	476	777	390	479	853	405		12	482	932	439	485	1016	1768		**27**	487	1096	401
138	488	753	389	485	827	396		13	487	905	427	490	987	1754		**28**	493	1066	387
139	487	728	375	490	801	386		14	493	877	417	496	958	1742		**29**	499	1035	372
140	492	703	366	495	775	377		15	498	849	405	501	929	1728		**30**	504	1004	357
141	497	679	358	500	748	367		16	503	822	394	506	899	1715		**31**	509	973	341
142	502	654	350	505	722	357		17	508	794	382	511	870	1701		**1**	514	942	326
143	507	629	342	510	696	347		18	513	766	370	516	841	1687		**2**	519	911	311
144	511	605	333	514	669	336		19	517	739	358	520	811	1673		**3**	523	880	294
145	516	580	324	519	643	327		20	522	711	346	525	782	1659		**4**	528	849	279
146	520	555	315	523	617	316		21	526	683	334	529	753	1645		**5**	532	818	262
147	524	530	306	527	590	305		22	530	655	321	534	723	1631		**6**	536	787	246
148	529	506	298	532	564	295		23	535	628	309	538	694	1616		**7**	540	757	230
149	532	481	288	536	538	284		24	539	600	297	542	665	1602		**8**	544	726	213
150	536	456	278	539	512	273		25	542	572	283	545	636	1586		**9**	548	696	197
151	539	432	268	542	485	261		26	545	545	270	548	606	1571		**10**	552	664	180
152	519	408	235	523	460	227		27	527	516	235	531	576	1535		**11**	535	632	143
153	522	395	225	526	445	215		28	530	499	221	534	557	1519		**12**	538	612	126
154	526	382	216	529	430	203		29	533	483	208	537	539	1504		**13**	541	591	108
155	529	368	205	532	416	192		30	536	466	191	540	520	1488		**14**	544	571	91
156	531	355	194	534	401	179		31	538	450	180	542	502	1472		**15**	546	550	72
157	533	342	183	536	386	166	*Tamil,* Purattasi, *Malayalam,* Kanni ; *Bengal,* Asvina.	1	540	433	165	544	483	1455	September	**16**	548	530	54
158	536	329	173	538	371	153		2	542	416	150	546	464	1438		**17**	550	510	36
159	538	316	162	540	356	140		3	544	400	136	548	446	1422		**18**	552	489	17
160	540	302	150	542	342	128		4	546	383	121	550	427	1405		**19**	554	409	—1
161	542	289	134	544	327	115		5	548	367	107	552	409	1389		**20**	556	448	20
162	543	276	127	546	312	102		6	549	350	91	553	390	1371		**21**	557	428	39
163	545	263	117	547	297	87		7	551	333	75	555	371	1355		**22**	559	408	57
164	547	250	105	548	282	73		8	553	317	60	557	353	1338		**23**	561	387	76
165	548	236	93	550	268	59		9	554	300	44	558	334	1320		**24**	562	367	96
166	548	223	79	551	253	45		10	554	284	26	558	316	1300		**25**	562	346	117
167	549	210	67	552	238	31		11	555	267	10	559	297	1282		**26**	563	326	164
168	550	197	54	553	223	17		12	556	250	6	560	278	1264		**27**	564	306	157
169	551	184	41	554	208	2		13	557	234	22	561	260	1246		**28**	565	285	178
170	551	170	28	554	194	— 13		14	557	217	39	561	241	1227		**29**	565	265	199
171	551	157	14	554	179	28		15	557	201	57	561	223	1207		**30**	565	244	220
172	552	144	2	554	164	44		16	557	184	74	561	204	1188		**1**	565	224	241
173	551	131	13	554	149	59		17	557	167	91	561	185	1169		**2**	565	204	262
174	551	118	27	554	134	74		18	557	151	108	561	167	1150		**3**	565	183	283
175	551	104	40	554	120	90		19	557	131	125	561	148	1131		**4**	565	163	304
176	550	91	55	554	105	105		20	557	118	143	561	130	1111		**5**	565	142	325
177	549	78	69	553	90	121		21	557	101	160	560	111	1091	October	**6**	564	122	347
178	548	65	84	552	75	137		22	555	84	179	559	92	1071		**7**	563	102	369
179	548	52	98	551	60	154		23	554	68	197	558	74	1051		**8**	562	81	392
180	547	38	112	550	46	170		24	553	51	215	557	55	1031		**9**	561	61	414
181	545	25	128	548	31	187		25	551	35	235	555	37	1009		**10**	559	40	437
182	544	12	142	547	16	204		26	550	18	253	554	18	989		**11**	558	20	459
183	542	0	158	545	0	221		27	549	0	271	554	0	970		**12**	558	0	480
184	541	—14	173	544	—15	237		28	547	—17	290	552	— 19	949		**13**	556	—21	503
185	539	27	188	542	31	255		29	545	34	309	550	38	928		**14**	554	42	526
186	537	41	204	540	46	272		30	543	52	319	548	58	906		**15**	552	63	549

TABLE XIII.

Sunrise from 18° to 22° N. Latitude.

Day of Solar year.	Lat. 18° —428″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Satara.** A.D. 1840—1920	Lat. 19° —460″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Poona.** A.D. 1840—1920	Days of solar months.	Lat. 20° —476″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Nasik.** A.D. 1840—1920	Lat. 21° +800″ Long. Eqn. of Time in Seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Nagpur.** A.D. 1840—1920	Eng. date.	Lat. 22° —616″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Baroda.** A.D. 1840—1920
187	+535	—54	—219	+538	—61	—289	1 (*Tamil*, Aippasi; *Malayalam*, Tulam; *Bengal*, Kartika.)	+541	—69	—348	+546	— 77	+885	**16** (October)	+550	— 84	—572
188	533	68	235	536	76	306	2	539	86	367	544	96	864	**17**	548	105	595
189	530	82	252	533	92	325	3	536	103	387	541	115	842	**18**	545	127	620
190	527	95	268	530	107	343	4	533	120	407	538	134	820	**19**	542	148	644
191	524	109	285	527	122	361	5	530	138	428	535	154	797	**20**	539	169	668
192	521	122	301	524	138	380	6	527	155	448	532	173	775	**21**	536	190	692
193	518	136	318	521	153	399	7	524	172	468	529	192	753	**22**	533	211	715
194	515	150	346	518	168	428	8	521	189	499	526	211	721	**23**	530	232	749
195	512	163	373	515	184	458	9	518	206	532	523	230	688	**24**	527	253	783
196	508	177	402	511	199	488	10	514	224	561	519	250	655	**25**	523	274	818
197	504	190	431	507	214	518	11	510	241	593	515	269	622	**26**	519	295	853
198	500	204	459	503	229	548	12	506	258	624	511	288	589	**27**	515	316	887
199	496	218	488	499	245	579	13	502	275	656	507	307	555	**28**	511	338	922
200	491	231	518	494	260	610	14	497	292	689	502	326	521	**29**	506	359	958
201	487	245	547	490	275	640	15	493	310	721	498	346	488	**30**	502	380	993
202	483	258	575	486	291	677	16	489	327	752	494	365	454	**31**	498	401	1028
203	478	272	606	481	306	702	17	484	344	785	490	384	411	**1** (November)	493	422	1064
204	473	286	635	476	321	733	18	479	361	818	484	403	386	**2**	488	443	1100
205	468	299	664	471	337	765	19	474	378	850	479	422	351	**3**	483	464	1136
206	463	313	694	466	352	796	20	469	396	883	474	442	317	**4**	478	485	1172
207	459	326	723	462	367	825	21	465	413	915	470	461	284	**5**	474	506	1207
208	454	340	752	457	382	857	22	460	430	947	465	480	250	**6**	469	527	1242
209	448	354	783	451	398	890	23	454	447	981	459	499	214	**7**	463	549	1279
210	443	367	813	446	413	921	24	449	464	1010	454	518	180	**8**	458	570	1315
211	437	381	844	440	428	953	25	443	482	1018	448	538	145	**9**	452	591	1352
212	431	394	874	434	444	984	26	437	499	1081	442	557	109	**10**	446	612	1389
213	441	408	889	443	460	1003	27	446	516	1100	449	576	87	**11**	451	632	1415
214	435	433	920	437	486	1035	28	440	544	1134	443	605	52	**12**	445	663	1451
215	428	457	951	430	513	1069	29	433	571	1168	436	635	15	**13**	438	694	1490
216	421	482	983	423	539	1102	30	426	599	1203	429	664	— 21	**14**	431	725	1528
217	414	507	1015	416	565	1135	1 (*Tamil*, Kartigai; *Malayalam*, Vrischikam; *Bengal*, Margasira.)	419	627	1238	422	693	57	**15**	424	756	1566
218	407	531	1046	409	591	1168	2	412	654	1272	415	722	93	**16**	417	786	1603
219	400	556	1078	402	618	1202	3	405	682	1307	408	752	130	**17**	409	817	1642
220	393	581	1110	395	644	1235	4	398	710	1342	401	781	166	**18**	402	848	1680
221	386	606	1142	388	670	1268	5	391	738	1377	394	810	202	**19**	394	879	1719
222	379	630	1173	381	697	1302	6	384	765	1411	387	840	239	**20**	386	910	1758
223	372	655	1204	374	723	1334	7	377	793	1447	380	809	276	**21**	378	941	1798
224	364	680	1239	366	749	1370	8	369	821	1484	372	898	313	**22**	370	972	1836
225	356	704	1275	358	776	1406	9	361	848	1520	364	928	350	**23**	362	1003	1874
226	348	729	1310	350	802	1442	10	353	876	1557	356	957	388	**24**	354	1034	1911
227	340	754	1346	342	828	1478	11	345	904	1593	348	986	425	**25**	345	1065	1950
228	332	778	1381	334	854	1514	12	337	931	1630	340	1015	462	**26**	337	1095	1988
229	324	803	1417	326	881	1550	13	329	959	1667	332	1045	499	**27**	329	1126	2026
230	315	828	1453	317	907	1587	14	320	987	1704	323	1074	537	**28**	320	1157	2065
231	307	853	1489	309	933	1623	15	312	1015	1741	315	1103	575	**29**	311	1188	2103
232	299	877	1524	301	960	1659	16	304	1042	1777	307	1133	612	**30**	303	1219	2141
233	291	902	1560	293	986	1695	17	296	1070	1814	298	1162	649	**1** (December)	294	1250	2180
234	282	927	1626	284	1012	1732	18	287	1098	1852	290	1191	687	**2**	284	1280	2220
235	273	951	1633	275	1039	1769	19	278	1125	1889	281	1221	725	**3**	275	1312	2259
236	264	976	1669	266	1065	1806	20	269	1153	1927	272	1250	764	**4**	266	1343	2297
237	255	1001	1706	257	1091	1843	21	260	1181	1964	263	1279	852	**5**	257	1374	2336
238	246	1025	1742	248	1117	1880	22	251	1208	2002	254	1308	840	**6**	248	1404	2375
239	237	1050	1779	239	1144	1917	23	242	1236	2040	245	1338	878	**7**	238	1435	2415
240	228	1075	1815	230	1170	1954	24	233	1264	2077	236	1367	916	**8**	229	1466	2454
241	218	1100	1853	220	1196	1992	25	223	1292	2116	226	1396	956	**9**	219	1497	2493
242	209	1124	1889	211	1223	2029	26	214	1319	2153	217	1426	994	**10**	210	1528	2532
243	202	1148	1924	203	1248	2065	27	203	1348	2193	203	1456	1027	**11**	204	1560	2568
244	193	1175	1960	194	1276	2102	28	194	1377	2231	194	1485	1075	**12**	195	1590	2607
245	183	1203	1998	184	1304	2140	29	184	1405	2269	184	1514	1114	**13**	185	1620	2647
246	173	1230	2035	174	1332	2178	30	174	1434	2308	174	1544	1154	**14**	175	1649	2686

TABLE XIII.

Sunrise from 18° to 22° N. Latitude.

Day of Solar year.	Lat. 18° —428″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Satara. A.D. 1840—1920	Lat. 19° —460″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Poona. A.D. 1840—1920	Days of solar months.	Lat. 20° —476″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Nasik. A.D. 1840—1920	Lat. 21° +800″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Nagpur. A.D. 1840—1920	Eng. date.	Lat. 22° —616″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Baroda. A.D. 1840—1920
247	+163	—1258	—2073	+164	—1360	—2216	1 (*Tamil*, Margali; *Malayalam*, Dhanus; *Bengal*, Pausha.)	+164	—1462	—2346	+164	—1573	—1193	**15** (December)	+165	—1679	—2726
248	153	1285	2110	154	1388	2254	2	154	1491	2385	154	1602	1232	**16**	155	1709	2766
249	143	1313	2148	144	1416	2292	3	144	1520	2424	144	1631	1271	**17**	145	1739	2806
250	133	1340	2185	134	1444	2330	4	134	1548	2462	134	1660	1310	**18**	135	1769	2846
251	123	1368	2223	124	1472	2368	5	124	1577	2501	124	1690	1350	**19**	125	1798	2885
252	113	1395	2260	114	1500	2406	6	114	1605	2539	114	1719	1389	**20**	115	1828	2925
253	103	1423	2298	104	1528	2444	7	104	1634	2598	104	1748	1428	**21**	105	1858	2965
254	93	1450	2335	94	1556	2482	8	94	1663	2618	94	1777	1466	**22**	95	1888	3005
255	83	1478	2353	84	1584	2499	9	84	1691	2634	84	1806	1482	**23**	85	1918	3020
256	73	1505	2370	74	1612	2522	10	74	1720	2651	74	1836	1498	**24**	75	1947	3035
257	63	1533	2388	64	1640	2533	11	64	1748	2667	64	1865	1514	**25**	65	1977	3051
258	53	1560	2405	54	1668	2550	12	54	1777	2684	54	1894	1530	**26**	55	2007	3066
259	43	1588	2423	44	1696	2567	13	44	1806	2700	44	1923	1545	**27**	44	2037	3082
260	33	1615	2441	34	1724	2585	14	34	1834	2716	34	1952	1561	**28**	34	2067	3097
261	23	1643	2458	24	1752	2602	15	24	1863	2733	24	1982	1577	**29**	24	2096	3112
262	13	1670	2476	14	1780	2619	16	14	1891	2749	14	2011	1593	**30**	14	2126	3128
263	2	1698	2493	2	1808	2636	17	2	1920	2766	2	2040	1609	**31**	2	2156	3143
264	—10	1725	2515	—10	1836	2659	18	—10	1949	2788	—10	2069	1631	**1** (January)	—11	2186	3164
265	20	1753	2533	20	1864	2676	19	20	1977	2804	20	2098	1647	**2**	20	2216	3179
266	31	1780	2550	32	1892	2693	20	32	2006	2821	32	2128	1663	**3**	32	2245	3194
267	40	1808	2567	41	1920	2709	21	41	2034	2835	41	2157	1678	**4**	42	2275	3211
268	50	1835	2584	51	1948	2726	22	51	2063	2853	51	2186	1694	**5**	52	2305	3225
269	60	1863	2602	61	1976	2743	23	61	2092	2869	61	2215	1709	**6**	63	2335	3241
270	69	1890	2619	70	2004	2760	24	70	2120	2884	70	2244	1724	**7**	73	2365	3256
271	80	1918	2637	81	2032	2778	25	81	2149	2902	81	2274	1741	**8**	84	2394	3272
272	90	1945	2655	91	2060	2795	26	91	2177	2918	91	2303	1757	**9**	94	2424	3288
273	100	1973	2672	101	2088	2812	27	101	2206	2935	101	2332	1773	**10**	104	2454	3303
274	102	2000	2682	102	2116	2820	28	104	2236	2941	101	2360	1779	**11**	101	2484	3305
275	109	2008	2697	109	2123	2834	29	108	2242	2954	107	2366	1791	**12**	107	2489	3316
276	115	2015	2710	115	2130	2847	1 (*Tamil*, Tai; *Malayalam*, Magaram; *Bengal*, Magha.)	114	2249	2967	114	2372	1804	**13**	114	2494	3328
277	122	2023	2725	122	2137	2861	2	121	2255	2980	120	2378	1816	**14**	120	2500	3340
278	129	2030	2739	129	2144	2875	3	128	2262	2994	127	2384	1829	**15**	127	2505	3352
279	135	2038	2753	135	2151	2888	4	134	2268	3006	133	2389	1841	**16**	133	2510	3363
280	142	2046	2768	142	2159	2903	5	141	2274	3019	140	2395	1853	**17**	140	2515	3375
281	149	2053	2782	149	2166	2917	6	148	2281	3033	146	2401	1865	**18**	146	2520	3386
282	155	2061	2796	155	2173	2940	7	154	2287	3045	153	2407	1878	**19**	153	2526	3399
283	162	2068	2810	162	2180	2944	8	161	2294	3059	159	2413	1890	**20**	159	2631	3410
284	169	2076	2825	169	2187	2957	9	168	2300	3072	166	2419	1902	**21**	166	2536	3422
285	175	2084	2806	175	2194	2936	10	174	2306	3050	172	2425	1878	**22**	172	2541	3397
286	182	2091	2788	182	2201	2917	11	181	2313	3029	179	2431	1856	**23**	179	2546	3373
287	189	2099	2769	189	2208	2897	12	188	2318	3008	185	2437	1832	**24**	185	2552	3347
288	195	2106	2750	195	2215	2876	13	194	2326	2986	192	2443	1809	**25**	192	2557	3323
289	202	2114	2732	202	2222	2856	14	201	2332	2964	198	2448	1786	**26**	198	2562	3298
290	209	2122	2714	209	2230	2837	15	208	2338	2943	205	2454	1763	**27**	205	2567	3274
291	215	2129	2695	215	2237	2816	16	214	2345	2921	211	2460	1739	**28**	211	2572	3249
292	222	2137	2676	222	2244	2796	17	221	2351	2930	218	2466	1716	**29**	218	2578	3224
293	229	2144	2658	229	2251	2777	18	228	2358	2879	224	2472	1693	**30**	224	2583	3199
294	235	2152	2639	235	2258	2756	19	234	2364	2857	231	2474	1670	**31**	231	2588	3175
295	242	2160	2621	242	2265	2736	20	241	2370	2836	238	2484	1647	**1** (February)	237	2593	3150
296	249	2167	2603	249	2272	2717	21	248	2377	2815	245	2490	1625	**2**	244	2598	3126
297	255	2175	2583	255	2279	2696	22	254	2383	2793	252	2496	1602	**3**	250	2604	3100
298	262	2182	2565	262	2286	2676	23	261	2390	2772	259	2502	1579	**4**	257	2609	3076
299	269	2190	2537	269	2295	2656	24	268	2396	2750	266	2508	1556	**5**	263	2614	3051
300	276	2198	2529	275	2301	2636	25	274	2402	2728	272	2513	1533	**6**	270	2619	3027
301	283	2205	2519	282	2308	2616	26	281	2409	2707	278	2519	1509	**7**	276	2624	3002
302	290	2213	2492	289	2315	2596	27	288	2415	2686	284	2525	1485	**8**	283	2630	2977
303	297	2220	2474	295	2322	2576	28	294	2422	2664	290	2531	1462	**9**	289	2635	2952
304	304	2228	2456	302	2328	2556	29	300	2428	2642	297	2536	1439	**10**	295	2640	2927
305	307	2203	2434	305	2301	2532	30	303	2400	2617	300	2506	1412	**11**	298	2609	2899

TABLE XIII.

Sunrise from 18° to 22° N. Latitude.

Day of Solar year.	Lat. 18° —428″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Satara. A.D. 1840—1920	Lat. 19° —460″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Poona. A.D. 1840—1920	Days of solar months.	Lat. 20° —470″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Nasik. A.D. 1840—1920	Lat. 21° +800″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Nagpur. A.D. 1840—1920	Eng. date.	Lat. 22° —616″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Baroda. A.D. 1840—1920
306	—310	—2178	—2382	—308	—2275	—2509	1 (Tamil, Masi; Malayalam, Kumbam; Bengal, Phalguna.)	—306	—2372	—2592	—303	—2477	—1386	12 (February)	—301	—2578	—2871
307	313	2152	2389	311	2268	2485	2	309	2344	2567	306	2447	1359	13	304	2546	2842
308	316	2127	2367	314	2221	2461	3	312	2316	2542	309	2417	1332	14	307	2515	2814
309	319	2102	2345	317	2194	2437	4	315	2287	2516	312	2388	1305	15	310	2484	2786
310	322	2077	2323	320	2168	2414	5	318	2269	2491	315	2358	1279	16	313	2453	2758
311	325	2052	2301	323	2141	2390	6	321	2231	2466	318	2328	1252	17	316	2422	2730
312	328	2026	2278	326	2114	2366	7	324	2203	2441	321	2298	1225	18	319	2390	2701
313	331	2001	2256	329	2088	2343	8	327	2175	2416	324	2269	1199	19	322	2359	2673
314	334	1976	2234	332	2061	2319	9	330	2147	2391	327	2239	1172	20	325	2328	2645
315	337	1951	2213	335	2034	2295	10	333	2119	2365	330	2209	1146	21	328	2297	2616
316	340	1926	2170	338	2008	2250	11	336	2091	2316	333	2180	1095	22	331	2266	2563
317	343	1900	2128	341	1981	2207	12	339	2063	2267	336	2150	1044	23	334	2224	2511
318	346	1875	2087	344	1954	2164	13	342	2035	2218	339	2120	993	24	337	2203	2458
319	349	1850	2044	347	1927	2119	14	345	2006	2169	342	2090	942	25	340	2172	2405
320	352	1825	2002	350	1901	2076	15	348	1978	2120	345	2061	891	26	343	2141	2352
321	355	1808	1959	353	1874	2031	16	351	1950	2073	348	2031	841	27	346	2110	2300
322	358	1774	1916	356	1847	1986	17	354	1922	2023	351	2001	790	28	349	2078	2247
323	361	1749	1837	359	1821	1941	18	357	1894	1974	354	1972	739	1	352	2047	2194
324	364	1724	1829	362	1794	1872	19	360	1866	1925	357	1942	688	2	355	2016	2142
325	367	1699	1786	365	1767	1825	20	363	1838	1876	360	1912	637	3	358	1985	2089
326	370	1674	1741	368	1741	1778	21	366	1810	1827	363	1883	588	4	361	1954	2036
327	373	1648	1697	371	1714	1731	22	369	1782	1778	366	1853	535	5	363	1922	1983
328	376	1623	1652	374	1687	1684	23	872	1754	1729	369	1823	484	6	365	1891	1929
329	379	1698	1607	377	1660	1637	24	375	1725	1680	371	1793	430	7	367	1860	1875
330	382	1573	1561	380	1634	1590	25	377	1697	1632	373	1764	380	8	369	1829	1821
331	385	1548	1516	383	1607	1543	26	379	1669	1581	375	1734	329	9	371	1798	1768
332	388	1522	1471	385	1580	1495	27	381	1641	1531	377	1704	277	10	373	1766	1714
333	391	1497	1426	387	1554	1447	28	383	1613	1481	379	1675	225	11	375	1735	1660
334	392	1472	1379	389	1527	1399	29	385	1585	1431	381	1645	173	12	377	1704	1607
335	395	1448	1305	391	1500	1351	1 (Tamil, Panguni; Malayalam, Meenam; Bengal, Chaitra.)	387	1556	1381	383	1616	121	13	379	1672	1553
336	395	1400	1257	391	1450	1302	2	387	1504	1329	383	1562	67	14	379	1616	1497
337	396	1351	1209	392	1400	1252	3	388	1452	1278	384	1508	14	15	380	1561	1443
338	396	1303	1161	392	1350	1202	4	388	1400	1226	384	1454	+ 40	16 (March)	380	1505	1387
339	397	1255	1084	393	1300	1153	5	389	1348	1175	385	1400	93	17	381	1449	1332
340	397	1206	1065	393	1250	1103	6	389	1296	1123	385	1346	147	18	381	1393	1276
341	398	1158	1018	394	1200	1054	7	390	1246	1073	386	1293	199	19	382	1338	1222
342	398	1110	970	394	1150	1004	8	390	1193	1021	386	1239	253	20	382	1282	1166
343	399	1026	923	395	1100	955	9	391	1141	970	387	1185	306	21	383	1226	1112
344	399	1013	875	395	1050	905	10	391	1089	918	387	1131	360	22	383	1171	1056
345	400	965	828	396	1000	856	11	392	1037	868	388	1077	412	23	384	1115	1000
346	400	917	780	396	950	806	12	392	985	816	388	1023	466	24	384	1059	944
347	401	868	733	397	900	757	13	393	933	765	389	969	518	25	385	1004	890
348	401	820	685	397	850	707	14	393	881	713	389	915	572	26	385	948	834
349	402	772	637	398	800	658	15	394	829	662	390	861	625	27	386	592	779
350	402	723	589	398	750	608	16	394	779	611	390	807	670	28	386	836	724
351	403	675	542	399	700	559	17	395	726	560	391	754	732	29	387	781	669
352	403	627	493	399	650	509	18	395	674	508	391	700	786	30	387	725	613
353	404	579	446	400	600	460	19	396	622	447	392	646	839	31	388	668	559
354	404	530	398	400	550	410	20	396	570	395	392	592	893	1	388	614	503
355	405	482	350	401	500	361	21	397	518	344	393	538	946	2	389	558	448
356	405	434	302	401	450	311	22	397	466	293	393	484	999	3	389	502	393
357	406	385	255	402	400	262	23	398	414	242	394	430	1052	4	390	447	338
358	406	337	207	402	350	212	24	398	362	190	394	376	1106	5 (April)	390	391	282
359	407	259	159	403	300	163	25	399	310	139	395	322	1159	6	391	335	228
360	407	240	111	403	250	113	26	399	258	87	395	268	1213	7	391	279	172
361	408	192	64	404	200	64	27	400	207	36	396	215	1266	8	392	224	117
362	408	144	15	404	150	14	28	400	155	+ 16	396	161	1320	9	392	168	62
363	409	96	+ 32	405	100	+ 35	29	401	103	67	397	107	1373	10	393	173	7
364	409	48	80	405	50	85	30	401	51	119	397	53	1427	11	393	57	+ 49
365	409	0	129	405	0	136	31	401	0	171	397	0	1481	12	393	0	105

TABLE XIII.

Sunrise from 23° to 27° N. Latitude.

Day of Solar year.	Lat. 23° Eqn. of time in seconds.	Lat. 23° ⊙'s Trop. Long. in seconds.	Lat. 23° —20″ Long. Total Corrn. in seconds. **Indore.** A.D. 1840—1920	Lat. 24° Eqn. of time in seconds.	Lat. 24° ⊙'s Trop. Long. in seconds.	Lat. 24° —876″ Long. Total Corrn. in seconds. **Anhilwad.** A.D. 1840—1920	Days of solar months.	Lat. 25° Eqn. of time in seconds.	Lat. 25° ⊙'s Trop. Long. in seconds.	Lat. 25° +1736″ Long. Total Corrn. in seconds. **Benares.** A.D. 1840—1920	Lat. 26° Eqn. of Time in seconds.	Lat. 26° ⊙'s Trop. Long. in seconds.	Lat. 26° +2264″ Long. Total Corrn. in seconds. **Patna.** A.D. 1840—1920	**Eng. date.**	Lat. 27° Eqn. of Time in seconds.	Lat. 27° ⊙'s Trop. Long. in seconds.	Lat. 27° +1544″ Long. Total Corrn. in seconds. **Oudh.** A.D. 1840—1920
1	—389	+ 58	+ 801	—384	+ 60	— 8	1	—380	+ 62	+2652	—376	+ 64	+3230	**13**	—372	+ 66	+2556
2	387	115	860	383	119	+ 52	2	379	123	2714	374	128	3296	**14**	370	132	2624
3	385	173	920	381	179	114	3	377	185	2778	373	192	3361	**15**	368	198	2692
4	384	230	978	380	238	174	4	376	247	2841	372	256	3426	**16**	367	264	2759
5	382	288	1038	378	298	236	5	374	308	2904	370	319	3491	**17**	365	329	2827
6	380	346	1098	376	358	298	6	372	370	2968	368	383	3557	**18**	364	395	2894
7	379	403	1156	374	417	359	7	370	432	3032	366	447	3624	**19**	362	461	2962
8	376	461	1217	372	477	421	8	368	494	3096	364	511	3689	**20**	359	527	3031
9	374	518	1223	370	536	482	9	365	555	3160	361	575	3756	**21**	357	593	3099
10	372	576	1336	368	596	544	10	363	617	3225	359	639	3821	**22**	355	659	3165
11	369	634	1373	365	656	582	11	361	679	3263	357	703	3861	**23**	353	725	3206
12	367	691	1408	363	715	618	12	358	740	3302	355	767	3901	**24**	350	791	3248
13	364	749	1443	360	775	656	13	356	802	3340	352	831	3941	**25**	348	857	3290
14	362	806	1477	357	834	693	14	353	864	3380	349	895	3982	**26**	345	923	3332
15	359	864	1513	355	894	729	15	350	925	3418	347	958	4021	**27**	342	988	3374
16	356	922	1549	352	954	767	16	348	987	3456	344	1022	4062	**28**	340	1054	3415
17	353	979	1585	349	1013	804	17	345	1049	3495	341	1086	4103	**29**	338	1120	3456
18	350	1037	1620	346	1073	842	18	342	1111	3535	338	1150	4144	**30**	336	1186	3498
19	346	1094	1658	343	1132	879	19	338	1172	3574	336	1214	4183	**1**	334	1252	3539
20	343	1152	1694	339	1192	917	20	336	1234	3612	334	1278	4223	**2**	332	1318	3580
21	340	1210	1730	335	1252	956	21	334	1296	3650	332	1342	4263	**3**	330	1384	3621
22	338	1267	1765	333	1311	994	22	332	1357	3688	330	1406	4302	**4**	328	1450	3662
23	336	1325	1799	331	1371	1028	23	330	1419	3716	328	1470	4342	**5**	326	1516	3704
24	334	1382	1833	329	1430	1065	24	328	1481	3764	326	1534	4382	**6**	324	1582	3745
25	332	1440	1868	326	1490	1102	25	326	1542	3802	324	1597	4421	**7**	322	1648	3786
26	330	1498	1903	324	1550	1129	26	324	1604	3840	322	1661	4461	**8**	320	1714	3827
27	328	1555	1938	322	1609	1185	27	322	1666	3878	320	1725	4501	**9**	318	1780	3868
28	326	1613	1973	320	1669	1211	28	320	1728	3916	318	1789	4541	**10**	316	1846	3920
29	324	1617	2008	318	1728	1248	29	318	1789	3955	316	1853	4590	**11**	314	1912	3961
30	322	1728	2043	316	1788	1284	30	316	1852	3992	314	1916	4620	**12**	312	1976	3992
31	320	1762	2078	314	1823	1321	1	314	1888	4030	312	1954	4660	**13**	310	2015	4033
32	318	1795	2113	312	1857	1358	2	312	1924	4068	310	1932	4699	**14**	308	2054	4074
33	316	1827	2147	310	1892	1393	3	310	1960	4107	308	2029	4739	**15**	306	2094	4116
34	314	1859	2185	308	1926	1430	4	308	1997	4144	306	2067	4779	**16**	304	2133	4157
35	312	1892	2226	305	1960	1467	5	306	2032	4182	304	2104	4818	**17**	302	2172	4198
36	310	1925	2251	303	1995	1503	6	304	2068	4220	302	2142	4858	**18**	300	2211	4239
37	307	1958	2287	301	2029	1540	7	302	2104	4258	299	2180	4899	**19**	297	2250	4281
38	302	1990	2324	299	2064	1577	8	297	2141	4299	294	2218	4942	**20**	292	2290	4326
39	296	2024	2363	293	2098	1617	9	291	2176	4341	288	2255	4985	**21**	286	2329	4371
40	290	2057	2402	287	2132	1657	10	285	2212	4383	283	2293	5028	**22**	280	2368	4416
41	284	2090	2440	282	2167	1698	11	279	2248	4425	277	2331	5171	**23**	275	2407	4461
42	278	2123	2442	275	2201	1701	12	273	2284	4429	271	2368	5075	**24**	269	2446	4465
43	272	2155	2443	269	2235	1703	13	267	2320	4432	265	2406	5078	**25**	263	2486	4470
44	266	2187	2445	263	2270	1705	14	261	2356	4435	259	2444	5082	**26**	257	2525	4474
45	259	2220	2447	257	2304	1707	15	255	2392	4438	253	2481	5085	**27**	251	2564	4479
46	253	2253	2449	251	2339	1710	16	249	2428	4440	247	2519	5089	**28**	245	2603	4483
47	246	2286	2452	244	2373	1713	17	243	2464	4444	240	2557	5094	**29**	239	2642	4487
48	240	2318	2453	238	2407	1716	18	236	2500	4447	234	2595	5097	**30**	232	2682	4493
49	234	2352	2455	232	2442	1717	19	230	2537	4450	228	2632	5101	**31**	226	2721	4497
50	227	2385	2457	225	2476	1720	20	223	2572	4453	221	2670	5105	**1**	220	2760	4502
51	220	2418	2460	218	2511	1723	21	217	2608	4456	215	2708	5109	**2**	213	2799	4507
52	214	2451	2462	212	2545	1725	22	210	2644	4460	208	2745	5114	**3**	207	2838	4511
53	207	2483	2464	205	2579	1728	23	203	2681	4464	201	2783	5117	**4**	200	2878	4517
54	200	2515	2466	198	2614	1731	24	197	2716	4467	195	2821	5122	**5**	193	2917	4522
55	193	2548	2469	191	2648	1734	25	190	2752	4471	188	2858	5126	**6**	186	2956	4528
56	186	2581	2472	184	2682	1737	26	183	2788	4474	181	2896	5131	**7**	180	2995	4532
57	178	2614	2476	177	2717	1741	27	175	2824	4479	174	2934	5136	**8**	173	3034	4537
58	174	2646	2475	174	2752	1740	28	171	2860	4480	171	2972	5136	**9**	170	3074	4539
59	171	2679	2474	171	2786	1739	29	168	2896	4480	168	3009	5137	**10**	167	3113	4540
60	167	2712	2473	167	2820	1739	30	165	2932	4480	165	3047	5137	**11**	164	3152	4542
61	163	2744	2473	163	2856	1739	31	162	2968	4480	162	3084	5138	**12**	161	3192	4543
62	159	2740	2472	159	2852	1739	32	159	2965	4480	159	3082	5139	**13**	158	3190	4544

Tamil, Chittirai; *Malayalam*, Medam; *Bengal*, Vaisakha.

Tamil, Vaikasi; *Malayalam*, Edavam; *Bengal*, Jyeshta.

April

May

June

TABLE XIII.

Sunrise from 23° to 27° N. Latitude.

Day of Solar year.	Lat. 23° −20″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Indore.**	Lat. 24° −876″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Anhilwad.**	Solar month	Days of solar months.	Lat. 25° +1736″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Benares.**	Lat. 26° +2264″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Patna.**	Eng. month	**Eng. date.**	Lat. 27° +1544″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Oudh.**
			A.D. 1840—1920			**A.D.** 1840—1920					**A.D.** 1840—1920			**A.D.** 1840—1920					**A.D.** 1840—1920
63	−155	+2735	+2472	−155	+2848	+1739	*Tamil*, Ani; *Malayalam*, Mithunam; *Bengal*, Ashada.	1	−156	+2962	+4480	−156	+3079	+5139	June	**14**	−155	+3189	+4546
64	151	2731	2472	151	2844	1739		2	150	2959	4483	150	3077	5143		**15**	150	3187	4549
65	143	2726	2475	142	2840	1744		3	142	2956	4488	141	3074	5149		**16**	147	3186	4551
66	134	2722	2480	133	2837	1749		4	133	2952	4493	133	3072	5155		**17**	132	3184	4564
67	125	2718	2485	125	2833	1754		5	124	2949	4499	124	3070	5162		**18**	123	3182	4571
68	116	2713	2489	116	2830	1759		6	115	2946	4505	115	3067	5168		**19**	115	3181	4578
69	107	2709	2494	106	2825	1765		7	106	2943	4511	106	3065	5175		**20**	105	3179	4586
70	98	2704	2498	97	2821	1770		8	97	2940	4517	97	3062	5181		**21**	97	3178	4593
71	88	2700	2504	88	2817	1776		9	88	2937	4524	88	3060	5188		**22**	87	3176	4601
72	79	2606	2482	79	2813	1754		10	79	2934	4501	79	3058	5164		**23**	78	3174	4577
73	70	2691	2461	70	2809	1722		11	70	2931	4478	70	3055	5141		**24**	69	3173	4552
74	61	2686	2439	61	2805	1710		12	60	2928	4456	60	3053	5118		**25**	60	3171	4528
75	53	2682	2417	53	2801	1687		13	52	2925	4432	52	3050	5094		**26**	52	3170	4503
76	42	2678	2397	42	2797	1666		14	42	2921	4411	42	3048	5071		**27**	41	3168	4480
77	33	2674	2375	33	2794	1644		15	33	2918	4388	32	3046	5049		**28**	32	3166	4456
78	24	2669	2354	24	2790	1622		16	24	2915	4365	24	3043	5024		**29**	24	3165	4431
79	15	2665	2333	15	2786	1600		17	14	2912	4343	14	3041	5002		**30**	14	3163	4408
80	5	2660	2312	5	2782	1579		18	5	2909	4320	5	3038	4978	July	**1**	5	3162	4383
81	− 4	2656	2290	+ 4	2778	1557		19	+ 4	2906	4297	+ 4	3036	4955		**2**	+ 4	3160	4359
82	13	2652	2268	13	2774	1535		20	13	2903	4274	13	3034	4931		**3**	13	3158	4335
83	23	2647	2248	23	2770	1514		21	22	2900	4251	22	3031	4908		**4**	22	3157	4310
84	32	2643	2226	32	2766	1492		22	32	2897	4229	32	3029	4885		**5**	32	3155	4287
85	42	2638	2206	42	2762	1471		23	41	2894	4206	41	3026	4862		**6**	41	3154	4263
86	51	2634	2184	50	2758	1447		24	50	2890	4183	50	3024	4838		**7**	50	3152	4238
87	60	2630	2162	59	2755	1425		25	59	2887	4161	59	3022	4815		**8**	59	3150	4214
88	69	2625	2141	69	2751	1404		26	69	2884	4139	68	3019	4791		**9**	68	3149	4190
89	78	2621	2119	78	2747	1382		27	78	2881	4116	78	3017	4769		**10**	77	3147	4166
90	87	2616	2098	87	2743	1360		28	87	2878	4093	87	3014	4745		**11**	86	3146	4141
91	107	2612	2087	107	2740	1349		29	108	2876	4082	108	3012	4734		**12**	108	3144	4130
92	117	2581	2066	118	2709	1329		30	118	2844	4060	118	2979	4711		**13**	119	3111	4100
93	127	2551	2046	128	2678	1308		31	128	2812	4038	128	2947	4689		**14**	129	3077	4084
94	137	2520	2025	138	2647	1287		32	138	2780	4016	138	2914	4666		**15**	139	3044	4061
95	147	2490	2005	148	2616	1266	*Tamil*, Adi; *Malayalam*, Karkatagam; *Bengal*, Sravana.	1	148	2748	3994	148	2882	4644		**16**	149	3011	4038
96	157	2459	1984	158	2584	1245		2	158	2717	3972	158	2849	4621		**17**	159	2977	4014
97	167	2428	1963	168	2553	1223		3	168	2685	3951	168	2817	4599		**18**	169	2944	3991
98	177	2398	1943	177	2522	1201		4	178	2653	3929	178	2784	4576		**19**	179	2911	3968
99	187	2368	1922	187	2491	1180		5	188	2621	3907	188	2752	4554		**20**	189	2878	3945
100	196	2337	1901	197	2460	1159		6	197	2589	3884	198	2719	4531		**21**	198	2844	3920
101	206	2306	1880	206	2429	1137		7	207	2557	3862	207	2687	4508		**22**	208	2811	3897
102	215	2275	1859	216	2398	1116		8	217	2525	3841	217	2654	4485		**23**	218	2778	3874
103	225	2245	1836	226	2367	1092		9	226	2493	3814	227	2622	4457		**24**	227	2744	3844
104	235	2214	1814	235	2336	1067		10	236	2461	3788	236	2589	4429		**25**	237	2711	3815
105	244	2184	1790	244	2305	1041		11	245	2429	3761	246	2557	4401		**26**	246	2678	3784
106	253	2153	1767	254	2273	1017		12	254	2397	3734	255	2524	4372		**27**	256	2644	3755
107	262	2122	1743	263	2242	1011		13	263	2366	3707	264	2492	4343		**28**	265	2611	3725
108	271	2092	1720	272	2211	974		14	273	2334	3682	273	2459	4315		**29**	274	2578	3695
109	280	2061	1696	281	2180	941		15	282	2302	3655	283	2427	4287		**30**	283	2545	3665
110	291	2031	1675	290	2149	916		16	291	2270	3628	292	2394	4258		**31**	292	2511	3634
111	298	2000	1649	299	2118	890		17	299	2238	3600	300	2362	4229	August	**1**	301	2478	3604
112	307	1969	1626	308	2087	865		18	308	2206	3573	309	2329	4200		**2**	310	2445	3574
113	315	1939	1601	316	2056	839		19	317	2174	3546	318	2297	4171		**3**	319	2411	3544
114	324	1908	1578	325	2025	813		20	326	2142	3519	327	2264	4143		**4**	328	2378	3514
115	333	1878	1554	333	1994	787		21	334	2110	3491	335	2232	4113		**5**	336	2345	3482
116	341	1847	1530	342	1963	762		22	343	2078	3464	344	2199	4084		**6**	344	2311	3451
117	349	1816	1505	350	1931	735		23	351	2047	3436	352	2167	4054		**7**	353	2278	3421
118	358	1786	1482	358	1900	709		24	359	2015	3409	360	2134	4025		**8**	361	2245	3390
119	365	1755	1456	366	1869	683		25	367	1983	3381	368	2102	3995		**9**	369	2212	3359
120	373	1725	1432	374	1838	657		26	375	1951	3353	376	2069	3965		**10**	377	2178	3327
121	382	1694	1408	385	1807	633		27	387	1919	3329	389	2037	3941		**11**	391	2145	3305
122	390	1664	1384	393	1776	607		28	395	1888	3301	397	2004	3949		**12**	400	2112	3272
123	397	1631	1358	400	1742	580		29	402	1852	3272	404	1966	3918		**13**	407	2073	3240
124	405	1599	1334	408	1708	553		30	410	1816	3244	412	1929	3888		**14**	415	2034	3206
125	412	1566	1308	415	1673	526		31	417	1780	3215	419	1891	3858		**15**	422	1994	3179

TABLE XIII.

Sunrise from 23° to 27° N. Latitude.

Day of Solar year.	Lat. 23° −20″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Indore. A.D. 1840—1920	Lat. 24° −876″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Anhilwad. A.D. 1840—1920	Days of solar months.	Lat. 25° +1786″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Benares. A.D. 1840—1920	Lat. 26° +2264″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Patna. A.D. 1840—1920	Eng. date.	Lat. 27° +1544″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Oudh. A.D. 1840—1920
126	+420	+1534	+1284	+422	+1639	+499	1 (Tamil, Avani; Malayalam, Chingam; Bengal, Bhadrapada.)	+424	+1744	+3186	+426	+1853	+3827	16 (August)	+429	+1955	+3144
127	427	1501	1258	429	1604	471	2	431	1708	3157	433	1815	3796	17	436	1916	3112
128	434	1469	1233	436	1570	444	3	438	1673	3129	440	1778	3765	18	443	1877	3080
129	441	1436	1207	443	1536	417	4	445	1637	3100	447	1740	3735	19	450	1838	3048
130	448	1404	1182	450	1502	390	5	452	1601	3071	454	1702	3704	20	457	1798	3015
131	454	1371	1155	456	1467	361	6	458	1565	3041	460	1665	3672	21	463	1759	2982
132	460	1339	1128	462	1433	334	7	464	1529	3012	466	1627	3641	22	469	1720	2949
133	467	1306	1113	469	1399	317	8	471	1493	2993	473	1589	3609	23	476	1681	2926
134	473	1274	1097	475	1364	299	9	477	1457	2973	479	1552	3559	24	482	1642	2902
135	479	1241	1080	481	1330	281	10	483	1421	2952	485	1514	3537	25	488	1602	2877
136	485	1209	1064	487	1296	263	11	489	1385	2932	491	1476	3515	26	494	1563	2853
137	490	1176	1047	493	1261	244	12	495	1349	2912	497	1438	3492	27	500	1524	2829
138	496	1144	1031	499	1227	226	13	501	1314	2892	503	1401	3470	28	506	1485	2805
139	502	1111	1015	505	1193	208	14	507	1278	2872	509	1363	3448	29	512	1446	2781
140	507	1079	1007	510	1159	189	15	512	1242	2850	514	1325	3425	30	517	1406	2755
141	512	1046	980	515	1124	170	16	517	1206	2829	519	1288	3402	31	522	1367	2730
142	517	1014	963	520	1090	141	17	522	1170	2808	524	1250	3379	1 (September)	527	1328	2705
143	522	981	946	525	1056	132	18	527	1134	2787	529	1212	3356	2	532	1289	2680
144	527	949	929	530	1021	113	19	532	1098	2766	534	1175	3333	3	537	1250	2655
145	531	916	910	535	987	94	20	537	1062	2744	539	1137	3310	4	542	1210	2629
146	536	884	893	539	953	74	21	541	1026	2722	543	1099	3286	5	546	1171	2603
147	540	851	875	542	918	52	22	545	990	2700	547	1061	3261	6	550	1132	2577
148	544	819	857	546	884	32	23	546	955	2675	552	1024	3238	7	552	1093	2549
149	546	786	837	548	850	10	24	547	919	2650	554	986	3212	8	554	1054	2521
150	547	754	815	550	816	— 12	25	548	883	2624	555	948	3185	9	556	1014	2492
151	548	721	794	551	781	35	26	550	847	2600	556	911	3158	10	558	975	2464
152	549	688	773	552	748	58	27	551	812	2575	558	872	3132	11	560	936	2436
153	550	666	752	553	724	81	28	553	786	2551	559	844	3105	12	562	906	2408
154	551	644	731	555	700	103	29	554	760	2526	560	816	3078	13	564	876	2380
155	552	621	709	556	676	126	30	555	733	2500	561	788	3051	14	566	845	2341
156	553	599	688	557	652	149	31	556	707	2475	563	760	3025	15	568	815	2323
157	554	577	667	558	627	175	1 (Tamil, Purattasi; Malayalam, Kanni. Bengal, Asvina.)	558	681	2451	565	731	2998	16	570	785	2295
158	555	555	646	560	603	195	2	560	655	2427	567	703	2972	17	572	755	2267
159	557	533	626	562	579	217	3	562	629	2403	570	675	2947	18	574	725	2239
160	559	510	605	564	555	239	4	564	602	2380	572	647	2927	19	576	694	2210
161	561	488	585	566	531	359	5	566	576	2354	574	619	2895	20	578	664	2182
162	562	466	564	567	507	334	6	568	550	2330	575	591	2868	21	579	634	2153
163	564	444	544	569	483	307	7	570	524	2306	577	562	2841	22	581	604	2125
164	566	422	523	571	459	330	8	572	498	2281	579	535	2814	23	583	574	2096
165	567	399	501	572	435	354	9	574	471	2256	580	507	2786	24	584	543	2066
166	567	377	478	572	411	379	10	576	445	2231	580	479	2756	25	584	523	2034
167	568	355	456	573	386	403	11	577	419	2205	581	450	2729	26	585	483	2004
168	569	333	435	574	362	426	12	578	393	2179	582	422	2701	27	586	453	1974
169	570	311	413	575	338	450	13	579	367	2152	583	394	2672	28	587	423	1944
170	570	288	390	575	314	475	14	579	340	2125	583	366	2643	29	587	392	1913
171	570	266	367	575	290	500	15	579	314	2098	583	338	2614	30	587	362	1881
172	570	244	344	575	266	525	16	579	288	2071	583	310	2585	1 (October)	587	332	1850
173	570	222	321	575	242	550	17	579	262	2044	583	282	2556	2	587	302	1819
174	570	200	298	575	218	575	18	579	236	2017	583	254	2527	3	587	272	1788
175	570	177	275	575	194	600	19	579	209	1990	583	226	2498	4	587	241	1757
176	570	155	252	575	170	625	20	579	183	1963	583	198	2469	5	587	211	1725
177	569	133	228	574	145	651	21	578	157	1935	582	169	2439	6	586	181	1693
178	568	111	205	573	121	676	22	577	131	1907	581	141	2409	7	585	151	1661
179	567	89	181	572	97	702	23	576	105	1878	580	113	2378	8	584	121	1629
180	566	66	151	571	73	728	24	575	78	1850	579	85	2348	9	583	90	1597
181	564	44	132	569	49	755	25	573	52	1821	577	57	2317	10	581	60	1563
182	563	22	108	568	25	781	26	572	26	1793	576	29	2287	11	580	30	1531
183	562	0	84	566	0	808	27	570	0	1764	575	0	2257	12	579	0	1499
184	560	— 23	59	564	— 25	835	28	568	— 27	1735	573	— 29	2226	13	577	— 31	1466
185	558	46	34	562	50	862	29	566	54	1706	571	58	2195	14	575	62	1433
186	556	69	9	560	75	889	30	564	81	1677	569	87	2164	15	573	94	1399

TABLE XIII.

Sunrise from 23° to 27° N. Latitude.

Day of Solar year.	Lat. 23° —20″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Indore. A.D. 1840—1920	Lat. 24° —876″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Anhilwad. A.D. 1840—1920	Days of solar months.	Lat 25° +1736″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Benares. A.D. 1840—1920	Lat. 26° +2264″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Patna. A.D. 1840—1920	Eng. date.	Lat. 27° +1544″ Long. Eqn. of Time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Oudh. A.D. 1840—1920
							Tamil, Aippasi; Malayalam, Tulam; Bengal, Kartika.							October			
187	+554	— 92	— 24	+558	—100	—916	1	+562	—108	+1648	+567	—116	+2133	16	+571	—125	+1366
188	551	114	41	555	124	943	2	559	135	1618	564	145	2101	17	568	156	1332
189	548	137	67	552	149	971	3	556	163	1587	561	175	2068	18	565	187	1298
190	545	160	93	549	174	999	4	553	190	1557	558	204	2036	19	562	218	1264
191	542	183	119	546	199	1027	5	550	217	1527	555	232	2004	20	559	250	1229
192	539	206	145	543	224	1055	6	547	244	1497	552	262	1972	21	556	281	1195
193	536	229	172	540	249	1084	7	543	271	1467	548	291	1940	22	552	312	1160
194	533	252	208	537	274	1121	8	540	298	1428	545	320	1899	23	549	343	1118
195	530	275	243	534	299	1159	9	536	325	1388	541	349	1858	24	545	374	1075
196	526	298	279	530	324	1197	10	532	352	1348	537	378	1816	25	541	406	1031
197	522	321	316	526	349	1235	11	528	379	1308	533	407	1774	26	537	437	988
198	518	343	352	522	373	1273	12	524	406	1269	529	436	1733	27	533	468	945
199	514	366	389	518	398	1312	13	520	434	1229	525	466	1691	28	529	499	902
200	509	389	426	513	423	1351	14	515	461	1188	520	495	1648	29	524	530	858
201	505	412	463	509	448	1389	15	511	488	1148	515	524	1605	30	519	562	813
202	501	435	499	505	473	1428	16	507	515	1108	511	553	1564	31	515	593	770
203	496	458	537	500	498	1467	17	502	542	1067	506	582	1521	1	510	624	726
204	491	481	574	495	523	1506	18	497	569	1026	500	611	1457	2	504	655	681
205	486	504	612	490	548	1546	19	492	596	985	495	640	1435	3	499	686	637
206	481	527	649	485	573	1585	20	487	623	944	490	669	1392	4	494	718	592
207	477	550	686	481	598	1623	21	483	650	904	486	698	1350	5	490	749	549
208	472	572	723	476	622	1662	22	478	677	864	480	727	1307	6	484	780	504
209	466	595	762	470	647	1703	23	472	705	822	474	757	1263	7	478	811	459
210	461	618	799	465	672	1742	24	467	732	781	468	786	1219	8	472	842	414
211	455	641	838	459	697	1782	25	461	759	739	462	815	1175	9	466	874	368
212	450	664	875	454	722	1822	26	455	786	697	458	844	1134	10	462	905	325
213	446	688	912	450	748	1860	27	452	812	658	455	872	1093	11	458	936	282
214	445	721	945	447	782	1897	28	449	848	613	452	910	1052	12	455	975	240
215	441	753	982	444	817	1935	29	446	884	580	449	947	1012	13	452	1014	198
216	434	785	1021	437	851	1976	30	439	920	537	442	985	967	14	445	1054	151
							Tamil, Kartigai; Malayalam, Vrischikam; Bengal, Margasira.							November			
217	427	818	1061	430	885	2017	1	432	956	494	435	1023	922	15	438	1093	105
218	420	850	1100	423	919	2058	2	425	991	452	428	1060	878	16	431	1132	59
219	412	883	1141	415	954	2101	3	417	1027	408	420	1098	832	17	423	1171	12
220	405	915	1180	408	988	2142	4	410	1063	365	413	1136	787	18	416	1210	— 34
221	397	948	1221	400	1022	2184	5	402	1099	321	405	1174	741	19	408	1250	82
222	389	980	1261	392	1057	2227	6	394	1135	277	397	1211	696	20	400	1289	129
223	381	1013	1303	384	1091	2268	7	386	1171	234	389	1249	649	21	392	1328	176
224	373	1045	1342	376	1125	2307	8	378	1207	194	381	1287	609	22	384	1367	217
225	365	1078	1380	368	1160	2346	9	370	1243	154	373	1324	568	23	376	1406	259
226	357	1110	1419	360	1194	2385	10	362	1279	114	365	1362	528	24	368	1446	300
227	348	1143	1458	351	1228	2425	11	353	1315	73	356	1400	486	25	359	1485	342
228	340	1175	1497	343	1262	2464	12	345	1350	34	348	1437	446	26	351	1524	383
229	332	1208	1536	335	1297	2504	13	337	1386	— 6	340	1475	405	27	343	1563	425
230	323	1240	1575	326	1331	2544	14	328	1422	47	331	1513	364	28	334	1602	663
231	314	1273	1615	317	1365	2584	15	319	1458	88	322	1551	322	29	325	1642	509
232	306	1305	1653	309	1400	2623	16	311	1494	128	314	1588	282	30	317	1681	551
233	297	1338	1693	300	1434	2663	17	302	1530	169	305	1626	240	1	308	1720	593
234	287	1370	1734	290	1468	2704	18	292	1566	211	295	1664	198	2	298	1759	636
235	278	1403	1773	281	1503	2744	19	282	1602	253	286	1701	156	3	289	1798	679
236	269	1435	1813	272	1537	2784	20	274	1638	293	277	1739	115	4	280	1838	721
														December			
237	260	1468	1852	263	1571	2824	21	265	1674	334	268	1777	73	5	271	1877	763
238	251	1500	1892	254	1605	2864	22	256	1709	374	259	1814	32	6	262	1916	806
239	241	1533	1933	245	1640	2905	23	246	1745	416	249	1852	— 11	7	252	1955	849
240	232	1565	1972	236	1674	2945	24	237	1781	457	240	1890	52	8	243	1994	891
241	222	1598	2013	226	1708	2986	25	227	1817	499	230	1928	92	9	233	2034	934
242	213	1630	2052	217	1743	3026	26	218	1853	540	221	1965	136	10	224	2073	977
243	205	1664	2091	205	1776	3069	27	206	1888	584	206	2004	184	11	207	2112	1027
244	196	1695	2131	196	1807	3109	28	197	1920	625	197	2036	225	12	198	2145	1069
245	186	1725	2171	186	1838	3150	29	187	1952	667	187	2069	268	13	188	2179	1113
246	176	1756	2212	176	1869	3191	30	177	1984	709	177	2101	310	14	178	2212	1156

TABLE XIII.

Sunrise from 23° to 27° N. Latitude.

	Lat. 23° −20″ Long.			Lat. 24° −876″ Long.				Lat. 25° +1736″ Long.			Lat. 26° +2264″ Long.				Lat. 27° +1544″ Long.		
Day of Solar year.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Indore.** A.D. 1840—1920	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Anhilwad.** A.D. 1840—1920	Days of solar months.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Benares.** A.D. 1840—1920	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Patna.** A.D. 1840—1920	**Eng. date.**	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Oudh.** A.D. 1840—1920
							Tamil, Margali; *Malayalam*, Dhanus; *Bengal*, Pausha.							December			
247	+166	—1786	—2252	+166	—1900	—3232	1	+167	—2016	—751	+167	—2134	—353	**15**	+168	—2245	—1199
248	156	1817	2293	156	1931	3273	2	157	2047	792	157	2166	385	**16**	158	2278	1242
249	146	1848	2334	146	1963	3315	3	147	2079	834	147	2199	438	**17**	148	2312	1286
250	136	1878	2374	136	1994	3356	4	137	2111	876	137	2231	480	**18**	138	2345	1329
251	126	1909	2415	126	2025	3397	5	127	2143	918	127	2264	523	**19**	128	2378	1372
252	116	1939	2455	116	2056	3438	6	117	2175	960	117	2296	565	**20**	118	2412	1416
253	106	1970	2496	106	2087	3479	7	107	2207	1002	107	2329	608	**21**	108	2445	1459
254	96	2001	2536	96	2118	3520	8	97	2239	1043	97	2361	651	**22**	98	2478	1502
255	86	2031	2550	86	2149	3534	9	87	2271	1056	87	2394	663	**23**	88	2512	1514
256	76	2062	2565	76	2180	3548	10	77	2303	1069	77	2426	676	**24**	78	2545	1525
257	66	2092	2579	66	2211	3562	11	67	2335	1082	67	2459	688	**25**	68	2578	1537
258	56	2123	2594	56	2242	3576	12	57	2366	1095	57	2491	701	**26**	58	2612	1548
259	45	2154	2609	45	2274	3590	13	46	2398	1109	46	2524	714	**27**	47	2645	1561
260	35	2184	2623	35	2305	3604	14	36	2430	1123	36	2556	726	**28**	37	2678	1573
261	25	2215	2638	25	2336	3618	15	26	2462	1136	26	2589	739	**29**	27	2711	1584
262	15	2245	2652	15	2367	3632	16	16	2494	1149	16	2621	751	**30**	17	2745	1596
263	2	2276	2667	2	2398	3646	17	2	2526	1162	2	2654	764	**31**	2	2778	1607
														January			
264	— 11	2307	2689	— 11	2429	3666	18	—11	2558	1185	—11	2686	786	**1**	— 11	2811	1631
265	20	2337	2703	21	2460	3680	19	21	2590	1198	21	2719	798	**2**	21	2845	1643
266	33	2368	2718	33	2491	3696	20	34	2622	1211	34	2751	811	**3**	35	2878	1654
267	43	2398	2732	43	2522	3710	21	44	2654	1224	44	2784	823	**4**	45	2911	1666
268	53	2429	2747	53	2553	3724	22	54	2685	1237	54	2816	836	**5**	55	2944	1677
269	64	2460	2762	64	2585	3738	23	65	2717	1251	65	2849	849	**6**	66	2978	1690
270	74	2490	2776	74	2616	3752	24	75	2749	1265	75	2881	861	**7**	76	3011	1702
271	85	2521	2792	85	2647	3767	25	86	2781	1279	86	2914	875	**8**	87	3044	1714
272	95	2551	2806	95	2678	3781	26	96	2813	1292	96	2946	887	**9**	97	3078	1726
273	100	2582	2816	100	2709	3790	27	100	2845	1299	100	2979	894	**10**	100	3111	1730
274	101	2612	2821	101	2740	3795	28	101	2876	1303	101	3012	897	**11**	101	3144	1733
275	107	2616	2831	107	2744	3805	29	107	2879	1312	107	3014	905	**12**	107	3146	1741
							Tamil, Tai; *Malayalam*, Magaram; *Bengal*, Magha.										
276	113	2621	2842	113	2748	3815	1	113	2882	1321	113	3017	914	**13**	113	3147	1748
277	120	2625	2853	120	2752	3826	2	119	2885	1330	119	3019	922	**14**	119	3149	1756
278	126	2630	2864	126	2756	3836	3	126	2888	1340	125	3022	931	**15**	125	3150	1763
279	132	2634	2874	132	2759	3846	4	132	2891	1349	131	3024	939	**16**	131	3152	1771
280	139	2638	2885	139	2763	3856	5	138	2895	1359	137	3026	947	**17**	137	3154	1779
281	145	2643	2896	145	2767	3866	6	144	2898	1368	143	3029	956	**18**	143	3155	1786
282	151	2647	2906	151	2771	3876	7	151	2901	1378	149	3031	964	**19**	149	3157	1794
283	158	2652	2918	158	2775	3886	8	157	2904	1387	155	3034	973	**20**	155	3158	1801
284	164	2656	2928	164	2779	3896	9	163	2907	1395	161	3036	961	**21**	161	3160	1809
285	170	2660	2901	170	2783	3868	10	169	2910	1365	167	3038	949	**22**	167	3162	1776
286	177	2665	2875	177	2787	3840	11	176	2913	1336	173	3041	918	**23**	173	3163	1743
287	183	2669	2849	183	2791	3812	12	182	2916	1306	179	3043	886	**24**	179	3165	1709
288	189	2674	2822	189	2795	3783	13	188	2919	1276	185	3046	854	**25**	185	3166	1676
289	196	2678	2796	196	2798	3756	14	194	2922	1246	191	3048	822	**26**	191	3168	1643
290	202	2682	2769	202	2802	3728	15	201	2926	1217	197	3050	791	**27**	197	3170	1610
291	208	2687	2742	208	2806	3699	16	207	2929	1187	203	3053	759	**28**	203	3171	1577
292	215	2691	2717	215	2810	3672	17	213	2932	1157	209	3055	727	**29**	209	3173	1543
293	221	2696	2690	221	2814	3643	18	219	2935	1127	215	3058	696	**30**	215	3174	1510
294	227	2700	2663	227	2818	3615	19	226	2938	1098	221	3060	664	**31**	221	3176	1477
														February			
295	234	2704	2637	234	2822	3588	20	232	2941	1068	227	3062	632	**1**	227	3178	1444
296	240	2709	2610	240	2826	3559	21	238	2944	1038	233	3065	601	**2**	233	3179	1411
297	246	2713	2584	246	2830	3531	22	244	2947	1008	239	3067	569	**3**	239	3181	1377
298	253	2718	2558	253	2834	3503	23	251	2950	979	245	3070	537	**4**	245	3182	1344
299	259	2722	2531	259	2838	3475	24	257	2953	949	251	3072	505	**5**	251	3184	1311
300	265	2726	2504	265	2841	3447	25	263	2957	919	258	3074	475	**6**	257	3186	1278
301	272	2731	2488	272	2845	3419	26	269	2960	889	265	3077	444	**7**	263	3187	1245
302	278	2735	2452	278	2849	3391	27	276	2963	860	272	3079	413	**8**	270	3189	1212
303	284	2740	2425	284	2853	3362	28	282	2966	830	279	3082	383	**9**	277	3190	1180
304	292	2744	2400	290	2856	3334	29	288	2968	800	285	3084	351	**10**	283	3192	1147
305	294	2711	2369	292	2822	3302	30	290	2932	766	287	3046	315	**11**	285	3153	1110

TABLE XIII.

Sunrise from 23° to 27° N. Latitude.

Day of Solar year.	Lat. 23° −20″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Indore.** A.D. 1840—1920	Lat. 24° −876″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Anhilwad.** A.D. 1840—1920	Days of solar months.	Lat. 25° +1736″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Benares.** A.D. 1840—1920	Lat. 26° +2264″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Patna** A.D. 1840—1920	**Eng. date.**	Lat. 27° +1544″ Long. Eqn. of Time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. **Oudh.** A.D. 1840—1920
306	—297	—2678	—2339	—295	—2787	—3270	1 (*Tamil*, Masi; *Malayalam*, Kumbam; *Bengal*, Phalguna.)	—293	—2896	—733	—290	—3009	—281	February **12**	—288	—3114	—1074
307	300	2646	2310	297	2753	3238	2	295	2860	699	292	2971	245	**13**	290	3074	1036
308	303	2613	2280	300	2718	3206	3	298	2824	666	295	2933	210	**14**	293	3035	1000
309	305	2580	2249	302	2684	3174	4	300	2788	632	297	2895	173	**15**	295	2996	963
310	308	2547	2219	305	2650	3143	5	303	2752	599	300	2858	140	**16**	298	2957	927
311	311	2514	2189	307	2615	3110	6	305	2716	565	302	2820	104	**17**	300	2918	890
312	314	2482	2160	310	2581	3081	7	308	2680	532	305	2782	69	**18**	303	2878	853
313	316	2449	2129	312	2546	3046	8	310	2644	498	307	2745	34	**19**	305	2839	816
314	319	2416	2099	315	2512	3015	9	313	2608	465	310	2707	+ 1	**20**	308	2800	780
315	322	2388	2070	317	2478	2981	10	315	2572	431	312	2669	36	**21**	310	2761	742
316	325	2350	2015	320	2443	2924	11	318	2536	372	315	2632	97	**22**	313	2722	679
317	327	2318	1960	322	2409	2867	12	320	2500	318	317	2594	159	**23**	315	2682	615
318	330	2285	1905	325	2374	2810	13	323	2464	254	320	2556	220	**24**	318	2643	552
319	333	2252	1851	327	2340	2753	14	325	2428	194	322	2518	282	**25**	320	2604	488
320	336	2219	1796	330	2306	2696	15	328	2392	135	325	2481	343	**26**	323	2565	425
321	338	2196	1740	332	2271	2638	16	330	2356	76	327	2443	404	**27**	325	2526	360
322	341	2154	1686	335	2237	2582	17	333	2320	17	330	2405	465	**28**	328	2486	299
323	344	2121	1631	337	2202	2524	18	335	2284	+ 43	332	2368	527	March **1**	330	2447	235
324	347	2088	1577	340	2168	2468	19	338	2248	101	335	2330	588	**2**	333	2408	172
325	349	2055	1521	342	2134	2410	20	340	2212	161	337	2292	650	**3**	335	2369	108
326	352	2022	1466	345	2099	2353	21	343	2176	220	340	2255	711	**4**	338	2330	45
327	355	1990	1412	347	2065	2296	22	345	2140	279	342	2217	773	**5**	340	2290	+ 19
328	358	1957	1357	350	2030	2239	23	348	2104	338	345	2179	834	**6**	343	2251	82
329	360	1924	1302	353	1996	2183	24	350	2068	398	347	2141	896	**7**	345	2212	146
330	363	1891	1247	356	1962	2126	25	353	2032	457	350	2104	957	**8**	348	2173	209
331	366	1858	1192	359	1927	2069	26	355	1996	516	352	2066	1018	**9**	350	2134	272
332	369	1826	1138	362	1893	2013	27	358	1960	575	355	2028	1080	**10**	353	2094	335
333	371	1793	1082	365	1858	1956	28	361	1924	634	357	1991	1141	**11**	355	2055	399
334	374	1760	1028	368	1824	1900	29	364	1888	702	360	1953	1202	**12**	357	2016	463
335	376	1728	972	371	1788	1843	1 (*Tamil*, Panguni; *Malayalam*, Meenam; *Bengal*, Chaitra.)	367	1852	751	363	1916	1263	**13**	359	1976	527
336	376	1670	914	371	1728	1783	2	367	1790	813	363	1852	1327	**14**	359	1910	593
337	377	1613	858	372	1669	1725	3	368	1729	873	364	1788	1390	**15**	360	1844	658
338	377	1555	800	372	1609	1665	4	368	1667	935	364	1724	1454	**16**	360	1778	724
339	378	1498	744	373	1550	1607	5	369	1605	996	365	1660	1517	**17**	361	1712	789
340	378	1440	680	373	1490	1547	6	369	1543	1058	365	1596	1571	**18**	361	1646	855
341	379	1382	629	374	1430	1488	7	370	1482	1118	366	1533	1643	**19**	362	1581	919
342	379	1325	572	374	1371	1429	8	370	1420	1180	366	1469	1707	**20**	362	1515	985
343	380	1267	515	375	1311	1370	9	371	1358	1240	367	1405	1770	**21**	363	1449	1050
344	380	1210	456	375	1252	1311	10	371	1297	1300	367	1341	1830	**22**	363	1383	1116
345	381	1152	401	376	1192	1252	11	372	1235	1364	368	1277	1896	**23**	364	1317	1180
346	381	1094	343	376	1132	1192	12	372	1173	1426	368	1213	1960	**24**	364	1251	1246
347	382	1037	287	377	1073	1134	13	373	1112	1486	369	1149	2008	**25**	365	1185	1311
348	382	979	229	377	1013	1074	14	373	1050	1548	369	1085	2087	**26**	365	1119	1377
349	383	922	173	378	954	1016	15	374	988	1609	370	1021	2150	**27**	366	1053	1442
350	383	864	115	378	894	956	16	374	926	1670	370	957	2213	**28**	366	987	1507
351	384	806	58	379	834	897	17	375	865	1731	371	894	2276	**29**	367	922	1572
352	384	749	1	379	775	838	18	375	803	1793	371	829	2340	**30**	367	856	1638
353	385	691	+ 56	380	715	779	19	376	741	1854	372	766	2403	**31**	368	790	1703
354	385	634	113	380	656	720	20	376	670	1945	372	702	2467	April **1**	368	724	1769
355	386	576	170	381	596	661	21	377	618	1976	373	638	2530	**2**	369	658	1834
356	386	518	228	381	536	601	22	377	556	2038	373	574	2594	**3**	369	592	1900
357	387	461	284	382	477	543	23	378	495	2098	374	510	2657	**4**	370	526	1965
358	387	403	342	382	417	483	24	378	433	2160	374	446	2721	**5**	370	460	2031
359	388	346	398	383	358	425	25	379	371	2221	375	382	2784	**6**	371	394	2096
360	388	288	456	383	298	365	26	379	309	2282	375	318	2847	**7**	371	328	2161
361	389	230	513	384	238	306	27	380	248	2243	376	255	2910	**8**	372	263	2226
362	389	173	570	384	179	247	28	380	186	2405	376	191	2974	**9**	372	197	2292
363	390	115	627	385	119	188	29	381	125	2466	377	127	3037	**10**	373	131	2357
364	390	58	684	385	60	129	30	381	63	2527	377	64	3101	**11**	373	65	2423
365	391	0	741	386	0	70	31	382	0	2588	378	0	3164	**12**	374	0	2488

TABLE XIII.

Sunrise from 28° to 32° N. Latitude.

Day of Solar year.	Lat. 28° +460″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Mathura. A.D. 1840—1920	Lat. 29° +352″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Delhi. A.D. 1840—1920	Days of solar months.	Lat. 30° +152″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Patiala. A.D. 1840—1920	Lat. 31° +332″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Simla. A.D. 1840—1920	Eng. date.	Lat. 32° —348″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Lahore. A.D. 1840—1920
							Tamil, Chittirai; Malayalam, Medam; Bengal, Vaisakha.							April			
1	—367	+ 68	+1523	—362	+ 70	+1462	1	—357	+ 72	+1315	—353	+ 75	+1544	13	—348	+ 77	+ 917
2	364	136	1594	360	140	1534	2	355	145	1390	351	149	1620	14	346	154	998
3	363	204	1663	359	210	1605	3	354	217	1463	350	224	1696	15	345	230	1073
4	362	272	1732	358	280	1676	4	353	290	1537	348	298	1772	16	344	307	1151
5	360	341	1803	356	351	1748	5	351	362	1611	347	373	1848	17	342	384	1230
6	359	409	1872	354	421	1820	6	349	434	1685	345	447	1924	18	340	461	1309
7	357	477	1942	352	491	1893	7	348	507	1759	343	522	2001	19	339	538	1387
8	355	545	2012	351	561	1964	8	346	580	1833	341	596	2077	20	337	614	1465
9	353	613	2082	348	631	2037	9	344	652	1907	339	671	2154	21	335	691	1544
10	351	681	2153	346	701	2110	10	342	724	1982	337	745	2231	22	333	768	1623
11	348	749	2197	344	771	2155	11	339	796	2029	335	820	2280	23	330	845	1674
12	346	817	2240	342	841	2199	12	337	869	2076	333	894	2328	24	328	922	1725
13	344	885	2283	339	911	2245	13	335	941	2122	331	969	2374	25	326	998	1775
14	341	953	2327	337	981	2290	14	332	1014	2170	328	1043	2426	26	324	1075	1866
15	338	1022	2370	334	1051	2335	15	329	1086	2217	325	1118	2476	27	321	1152	1877
16	335	1090	2414	331	1122	2381	16	327	1158	2264	323	1192	2525	28	318	1229	1929
17	333	1158	2457	328	1192	2427	17	324	1231	2311	320	1267	2574	29	316	1306	1979
18	330	1226	2501	324	1262	2474	18	322	1303	2358	318	1341	2623	30	314	1382	2030
19	327	1294	2545	322	1332	2518	19	320	1376	2404	316	1416	2671	1	312	1459	2080
20	325	1362	2588	320	1402	2563	20	318	1448	2451	314	1490	2720	2	310	1536	2131
21	323	1430	2631	318	1472	2608	21	316	1520	2497	312	1565	2769	3	308	1613	2181
22	321	1498	2674	316	1542	2652	22	314	1593	2544	310	1639	2817	4	306	1690	2232
23	319	1566	2717	314	1612	2697	23	312	1665	2590	308	1714	2866	5	304	1766	2282
24	317	1634	2760	312	1682	2742	24	310	1738	2637	306	1788	2914	6	302	1843	2333
25	315	1703	2802	310	1752	2786	25	308	1810	2683	304	1863	2963	7	300	1920	2383
26	313	1771	2845	308	1822	2831	26	306	1882	2740	302	1937	3012	8	298	1997	2434
27	311	1839	2888	306	1893	2876	27	304	1955	2776	300	2012	3060	9	296	2074	2484
28	309	1907	2931	304	1963	2921	28	302	2027	2823	298	2086	3117	10	294	2150	2535
29	307	1975	2974	302	2033	2965	29	300	2099	2869	296	2161	3157	11	292	2227	2585
30	305	2044	3017	300	2104	3010	30	298	2172	2916	294	2236	3206	12	290	2304	2636
							Tamil, Vaikasi; Malayalam, Edavam; Bengal, Jyeshta.							May			
31	303	2085	3060	298	2147	3055	1	296	2216	2962	292	2283	3255	13	288	2352	2686
32	301	2126	3103	296	2189	3099	2	294	2261	3009	290	2329	3303	14	286	2401	2737
33	299	2167	3146	294	2232	3144	3	292	2305	3055	288	2373	3352	15	284	2449	2788
34	297	2208	3189	292	2275	3189	4	290	2350	4002	286	2422	3400	16	282	2498	2838
35	295	2248	3231	290	2317	3233	5	288	2394	3148	284	2469	3449	17	280	2546	2888
36	293	2289	3274	288	2360	3278	6	286	2439	3195	282	2516	3498	18	278	2595	2939
37	291	2330	3317	286	2403	3301	7	284	2483	3241	280	2562	3546	19	276	2643	2989
38	289	2371	3360	284	2446	3368	8	282	2528	3288	278	2609	3593	20	274	2692	3040
39	284	2412	3406	281	2488	3413	9	278	2572	3336	275	2655	3641	21	272	2740	3090
40	278	2453	3453	275	2531	3462	10	273	2617	3386	270	2702	3694	22	267	2789	3144
41	273	2494	3499	270	2574	3510	11	267	2661	3437	264	2749	3748	23	262	2837	3198
42	266	2535	3505	264	2616	3516	12	261	2706	3444	258	2795	3755	24	256	2886	3206
43	261	2576	3509	258	2659	3522	13	256	2750	3449	253	2842	3762	25	250	2934	3215
44	255	2617	3514	252	2702	3528	14	250	2795	3456	247	2888	3769	26	245	2983	3222
45	249	2657	3519	246	2744	3533	15	244	2839	3463	241	2935	3777	27	239	3031	3230
46	243	2698	3523	241	2787	3538	16	238	2884	3469	236	2982	3783	28	233	3080	3238
47	237	2739	3528	234	2830	3545	17	232	2928	3476	229	3028	3792	29	227	3128	3247
48	231	2780	3533	228	2873	3551	18	226	2973	3483	223	3075	3799	30	221	3177	3255
49	224	2821	3539	222	2915	3557	19	220	3017	3490	217	3121	3807	31	215	3225	3263
50	218	2862	3544	216	2958	3563	20	214	3062	3496	211	3168	3814	1	209	3274	3272
51	211	2903	3550	209	3001	3570	21	207	3106	3504	205	3215	3822	2	203	3322	3280
52	205	2944	3555	203	3043	3576	22	201	3151	3511	199	3261	3829	3	197	3371	3288
53	198	2985	3561	196	3086	3582	23	194	3195	3518	192	3308	3838	4	190	3419	3298
54	192	3026	3566	190	3129	3588	24	188	3240	3525	186	3354	3845	5	184	3468	3306
55	185	3066	3572	183	3171	3595	25	181	3284	3533	179	3401	3854	6	178	3516	3314
56	182	3107	3573	181	3214	3597	26	179	3329	3535	176	3448	3858	7	174	3565	3320
57	178	3148	3576	177	3257	3601	27	175	3373	3540	173	3494	3863	8	170	3613	3327
58	174	3189	3579	173	3300	3605	28	171	3418	3545	170	3541	3867	9	166	3662	3333
59	170	3230	3582	169	3342	3609	29	167	3462	3550	167	3587	3870	10	162	3710	3339
60	166	3271	3585	165	3385	3612	30	163	3507	3554	164	3634	3876	11	158	3759	3346
61	162	3312	3588	161	3428	3616	31	159	3552	3559	161	3680	3881	12	154	3808	3352
62	158	3311	3591	157	3428	3620	32	155	3553	3564	158	3681	3885	13	150	3810	3358

(June begins at Eng. date 1, Day of Solar year 50.)

TABLE XIII.

Sunrise from 28° to 32° N. Latitude.

Day of Solar year	Lat. 28° +460″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Mathura.** A.D. 1840—1920	Lat. 29° +352″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Delhi.** A.D. 1840—1920	Solar month	Days of solar months.	Lat. 30° +152″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Patiala.** A.D. 1840—1920	Lat. 31° +332″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Simla.** A.D. 1840—1920	Eng. month	**Eng. date.**	Lat. 32° −348″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Lahore.** A.D. 1840—1920
63	−154	+3310	+3594	−153	+3428	+3624	*Tamil*, Ani; *Malayalam*, Mithunam; *Bengal*, Ashada.	1	−151	+3553	+3567	−153	+3683	+3890	June	**14**	−146	+3813	+3365
64	150	3309	3597	149	3428	3628		2	147	3554	3573	146	3684	3899		**15**	142	3815	3371
65	141	3308	3605	140	3427	3637		3	140	3555	3581	139	3686	3909		**16**	139	3817	3376
66	132	3306	3612	131	3427	3646		4	131	3555	3590	131	3687	3918		**17**	130	3819	3387
67	123	3305	3620	123	3427	3654		5	122	3556	3600	122	3689	3929		**18**	121	3822	3399
68	114	3304	3628	114	3427	3663		6	113	3557	3609	113	3690	3939		**19**	113	3824	3409
69	105	3303	3636	105	3427	3672		7	104	3558	3619	104	3692	3950		**20**	104	3826	3420
70	96	3302	3644	96	3427	3681		8	96	3558	3628	95	3693	3960		**21**	95	3829	3432
71	87	3301	3653	87	3427	3690		9	87	3559	3637	86	3695	3970		**22**	86	3831	3442
72	78	3300	3628	78	3427	3663		10	78	3560	3610	77	3696	3943		**23**	77	3833	3414
73	69	3299	3603	69	3426	3638		11	69	3560	3584	69	3698	3915		**24**	68	3836	3386
74	60	3298	3578	60	3426	3612		12	59	3561	3558	59	3699	3888		**25**	59	3838	3358
75	52	3297	3552	52	3426	3585		13	52	3562	3530	51	3701	3860		**26**	51	3840	3329
76	41	3295	3529	41	3426	3561		14	41	3562	3505	41	3702	3834		**27**	41	3842	3302
77	32	3294	3505	32	3426	3536		15	32	3563	3479	32	3704	3807		**28**	32	3845	3[illegible]74
78	23	3293	3480	23	3426	3510		16	23	3564	3452	23	3705	3780		**29**	23	3847	3[illegible]46
79	14	3292	3455	14	3426	3484		17	14	3565	3426	14	3707	3752		**30**	14	3849	3218
80	5	3291	3430	5	3425	3459		18	5	3565	3399	5	3708	3725		**1**	5	3852	3190
81	+ 4	3290	3405	+ 4	3425	3433		19	+ 4	3566	3373	+ 4	3710	3698		**2**	+ 4	3854	3164
82	13	3289	3380	13	3425	3407		20	13	3567	3346	13	3711	3672		**3**	13	3856	3134
83	22	3288	3355	22	3425	3382		21	22	3567	3320	22	3713	3644		**4**	22	3859	3106
84	32	3287	3331	32	3425	3357		22	31	3568	3293	31	3714	3616		**5**	31	3861	3078
85	41	3286	3306	41	3425	3331		23	41	3569	3268	41	3716	3590		**6**	41	3863	3051
86	50	3284	3281	50	3425	3305		24	50	3569	3241	49	3717	3562		**7**	49	3865	3022
87	59	3283	3257	59	3425	3280		25	58	3570	3214	58	3719	3535		**8**	58	3868	2994
88	68	3282	3232	68	3424	3254		26	68	3570	3188	67	3720	3508		**9**	67	3870	2966
89	77	3281	3207	77	3424	3228		27	77	3571	3162	76	3722	3480		**10**	76	3872	2938
90	86	3280	3182	86	3424	3203		28	85	3572	3134	85	3723	3453		**11**	85	3875	2910
91	109	3280	3171	109	3424	3191		29	109	3572	3123	110	3724	3442		**12**	110	3876	2898
92	119	3246	3147	119	3389	3166		30	120	3536	3098	120	3688	3416		**13**	120	3839	2871
93	129	3212	3123	129	3355	3142		31	130	3501	3073	130	3652	3390		**14**	131	3802	2845
94	139	3178	3099	140	3320	3118		32	140	3465	3047	140	3615	3363		**15**	141	3765	2818
95	149	3144	3075	150	3285	3093	*Tamil*, Adi; *Malayalam*, Karkatagam; *Bengal*, Sravana.	1	150	3430	3022	150	3579	3337	July	**16**	151	3728	2791
96	159	3110	3051	160	3250	3068		2	160	3394	2996	161	3543	3312		**17**	161	3691	2764
97	169	3077	3028	170	3216	3044		3	170	3359	2971	171	3507	3286		**18**	171	3654	2737
98	179	3043	3004	180	3181	3019		4	180	3323	2945	181	3471	3260		**19**	181	3617	2710
99	189	3009	2980	190	3146	2994		5	191	3288	2921	191	3434	3233		**20**	192	3580	2684
100	199	2975	2956	199	3112	2969		6	200	3252	2894	201	3398	3207		**21**	201	3543	2656
101	209	2941	2932	209	3077	2944		7	210	3217	2869	210	3362	3180		**22**	211	3508	2629
102	218	2907	2906	219	3042	2919		8	220	3181	2844	220	3326	3152		**23**	221	3469	2601
103	228	2873	2875	229	3008	2886		9	229	3146	2808	230	3290	3115		**24**	231	3432	2562
104	238	2839	2844	238	2973	2852		10	239	3110	2774	240	3253	3078		**25**	241	3395	2523
105	247	2805	2812	248	2938	2820		11	249	3075	2739	249	3217	3041		**26**	250	3358	2484
106	257	2771	2781	257	2903	2786		12	258	3039	2703	259	3181	3004		**27**	260	3321	2445
107	266	2738	2749	266	2869	2752		13	267	3004	2667	268	3145	2966		**28**	269	3284	2405
108	275	2704	2718	276	2834	2719		14	277	2968	2633	277	3109	2928		**29**	278	3247	2363
109	284	2670	2686	285	2799	2685		15	286	2933	2597	287	3072	2891		**30**	287	3210	2325
110	293	2636	2654	294	2765	2652		16	295	2897	2561	296	3036	2854		**31**	296	3173	2286
111	302	2602	2622	303	2730	2618		17	304	2862	2526	304	3000	2815	August	**1**	305	3136	2246
112	311	2568	2590	312	2695	2584		18	313	2826	2490	314	2964	2778		**2**	314	3099	2206
113	320	2534	2558	320	2661	2549		19	321	2791	2453	322	2928	2739		**3**	323	3062	2166
114	329	2500	2526	330	2626	2516		20	330	2755	2418	331	2891	2701		**4**	332	3025	2126
115	337	2466	2493	338	2591	2482		21	339	2720	2382	340	2855	2664		**5**	341	2988	2087
116	345	2432	2460	346	2556	2447		22	347	2684	2345	348	2819	2625		**6**	349	2951	2046
117	353	2399	2437	354	2522	2412		23	355	2649	2308	357	2783	2587		**7**	358	2914	2006
118	362	2365	2396	363	2487	2378		24	364	2613	2273	365	2747	2548		**8**	366	2877	1965
119	370	2331	2363	571	2452	2343		25	372	2578	2236	373	2710	2509		**9**	374	2840	1924
120	378	2297	2330	379	2418	2309		26	380	2542	2199	381	2674	2471		**10**	382	2803	1884
121	394	2263	2305	396	2383	2283		27	399	2507	2175	402	2638	2445		**11**	390	2766	1843
122	402	2228	2272	405	2348	2249		28	407	2472	2137	410	2600	2406		**12**	413	2728	1817
123	409	2187	2238	413	2305	2214		29	415	2427	2100	418	2553	2367		**13**	421	2679	1776
124	417	2146	2205	421	2262	2179		30	423	2383	2064	426	2506	2328		**14**	429	2630	1735
125	424	2105	2171	428	2220	2144		31	430	2388	2026	433	2460	2289		**15**	436	2582	1694

TABLE XIII.

Sunrise from 28° to 32° N. Latitude.

Day of Solar year.	Lat. 28° Eqn. of time in seconds.	Lat. 28° ⊙'s Trop. Long. in seconds.	Lat. 28° +460″ Long. Total Corrn. in seconds. Mathura. A.D. 1840—1920	Lat. 29° Eqn. of time in seconds.	Lat. 29° ⊙'s Trop. Long. in seconds.	Lat. 29° +352″ Long. Total Corrn. in seconds. Delhi. A.D. 1840—1920	Days of solar months.	Lat. 30° Eqn. of time in seconds.	Lat. 30° ⊙'s Trop. Long. in seconds.	Lat. 30° +152″ Long. Total Corrn. in seconds. Patiala. A.D. 1840—1920	Lat. 31° Eqn. of time in seconds.	Lat. 31° ⊙'s Trop. Long. in seconds.	Lat. 31° +332″ Long. Total Corrn. in seconds. Simla. A.D. 1840—1920	Eng. date.	Lat. 32° Eqn. of time in seconds.	Lat. 32° ⊙'s Trop. Long. in seconds.	Lat. 32° —348″ Long. Total Corrn. in seconds. Lahore. A.D. 1840—1920
126	+433	+2064	+2139	+436	+2177	+2109	1	+438	+2293	+1989	+441	+2413	+2250	**16**	+444	+2533	+1653
127	440	2023	2105	444	2134	2074	2	445	2248	1952	449	2366	2211	**17**	452	2484	1612
128	447	1983	2072	451	2091	2038	3	453	2204	1915	456	2319	2171	**18**	459	2435	1570
129	454	1942	2038	458	2048	2002	4	460	2159	1877	463	2272	2131	**19**	466	2386	1528
130	461	1901	2004	465	2006	1967	5	467	2114	1839	470	2226	2092	**20**	473	2338	1487
131	467	1860	1969	471	1963	1930	6	474	2070	1802	477	2179	2052	**21**	480	2289	1445
132	473	1819	1933	477	1920	1893	7	481	2025	1765	484	2132	2012	**22**	487	2240	1403
133	480	1778	1908	484	1877	1856	8	488	1980	1735	491	2085	1980	**23**	494	2191	1369
134	486	1737	1882	490	1834	1837	9	494	1936	1705	497	2038	1948	**24**	500	2142	1334
135	492	1696	1855	496	1792	1809	10	500	1891	1674	503	1992	1915	**25**	506	2094	1300
136	498	1655	1829	502	1749	1781	11	506	1846	1644	509	1945	1883	**26**	512	2045	1265
137	504	1614	1803	508	1706	1752	12	512	1801	1613	515	1898	1850	**27**	518	1996	1230
138	510	1574	1777	514	1663	1724	13	518	1757	1583	521	1851	1817	**28**	524	1947	1195
139	516	1533	1751	520	1620	1696	14	524	1712	1552	527	1804	1785	**29**	530	1898	1160
140	521	1492	1723	525	1578	1667	15	529	1667	1521	532	1758	1751	**30**	535	1850	1125
141	526	1451	1696	530	1535	1637	16	534	1624	1489	538	1711	1719	**31**	541	1801	1090
142	531	1410	1669	535	1492	1608	17	539	1578	1458	543	1664	1685	**1**	546	1752	1054
143	536	1369	1642	540	1449	1579	18	544	1533	1426	548	1617	1651	**2**	551	1703	1018
144	541	1328	1615	545	1406	1549	19	549	1489	1395	553	1570	1618	**3**	556	1654	982
145	546	1287	1587	550	1364	1520	20	554	1444	1363	558	1524	1584	**4**	561	1606	947
146	550	1246	1559	554	1321	1490	21	558	1399	1331	562	1477	1550	**5**	566	1557	911
147	554	1205	1531	558	1278	1459	22	562	1354	1298	566	1430	1515	**6**	571	1508	875
148	556	1165	1501	560	1235	1427	23	564	1310	1264	568	1383	1478	**7**	574	1459	837
149	558	1124	1471	562	1192	1395	24	566	1265	1229	570	1336	1442	**8**	576	1410	798
150	560	1083	1440	564	1150	1363	25	568	1220	1195	572	1290	1405	**9**	578	1362	760
151	562	1042	1410	566	1107	1330	26	570	1176	1160	574	1243	1369	**10**	580	1313	721
152	564	1000	1380	568	1064	1298	27	572	1132	1126	576	1196	1332	**11**	582	1264	682
153	566	968	1350	570	1020	1265	28	574	1095	1091	578	1157	1295	**12**	584	1223	643
154	568	936	1320	572	995	1233	29	576	1059	1057	580	1119	1259	**13**	586	1182	604
155	570	903	1289	574	961	1191	30	578	1022	1022	582	1080	1222	**14**	588	1142	566
156	572	871	1259	576	927	1169	31	580	986	988	585	1042	1187	**15**	590	1101	527
157	574	839	1229	578	892	1136	1	583	949	954	587	1003	1150	**16**	592	1060	488
158	577	807	1200	581	858	1105	2	586	913	921	590	964	1114	**17**	595	1019	450
159	579	775	1170	583	824	1073	3	588	876	886	592	926	1078	**18**	597	978	411
160	581	742	1139	585	790	1041	4	590	840	852	594	887	1041	**19**	599	938	373
161	583	710	1109	587	755	1008	5	592	803	817	596	849	1005	**20**	601	897	334
162	584	678	1078	589	721	976	6	593	767	782	597	810	967	**21**	602	856	294
163	586	646	1046	590	687	942	7	595	730	747	599	771	931	**22**	604	815	256
164	588	614	1015	592	652	909	8	597	694	711	601	733	893	**23**	606	774	216
165	589	581	982	593	618	874	9	598	657	675	602	694	854	**24**	607	734	175
166	589	549	949	593	584	839	10	598	621	637	602	656	814	**25**	607	693	133
167	590	517	917	594	549	804	11	599	584	600	603	617	775	**26**	608	652	92
168	591	485	885	595	515	770	12	600	548	564	604	578	737	**27**	609	611	51
169	592	453	852	596	481	735	13	601	511	527	605	540	698	**28**	610	570	9
170	592	420	819	596	447	700	14	601	475	489	605	501	658	**29**	610	530	— 33
171	592	388	786	596	412	664	15	601	438	451	605	463	618	**30**	610	489	75
172	592	356	752	596	378	629	16	601	402	414	605	424	578	**1**	610	448	117
173	592	324	709	596	343	593	17	601	365	376	605	385	538	**2**	610	407	159
174	592	292	686	596	309	558	18	601	329	338	605	347	498	**3**	610	366	201
175	592	259	652	596	275	522	19	601	292	301	605	308	458	**4**	610	326	243
176	592	227	619	596	241	487	20	601	256	263	605	270	418	**5**	610	285	285
177	591	195	585	595	206	450	21	600	219	224	604	231	377	**6**	609	244	328
178	590	163	557	594	172	414	22	599	183	186	603	192	337	**7**	608	203	371
179	589	131	516	593	138	377	23	598	146	147	602	154	296	**8**	607	162	415
180	588	98	482	592	104	341	24	597	110	108	601	115	255	**9**	606	122	458
181	586	66	447	590	69	303	25	595	73	68	599	77	213	**10**	604	81	502
182	585	34	412	589	35	267	26	594	37	30	598	38	172	**11**	603	40	545
183	584	0	378	588	0	230	27	593	0	— 9	598	0	132	**12**	603	0	587
184	582	— 33	343	586	— 35	193	28	591	— 38	49	596	— 40	90	**13**	601	— 42	631
185	580	67	307	584	71	155	29	589	75	88	594	80	48	**14**	599	84	675
186	578	100	272	582	106	118	30	587	113	128	592	120	6	**15**	597	126	719

Solar months (days 1–31, rows 126–156): *Tamil*, Avani; *Malayalam*, Chingam; *Bengal*, Bhadrapada.

Solar months (days 1–30, rows 157–186): *Tamil*, Purattasi; *Malayalam*, Kanni; *Bengal*, Asvina.

English months: August (16–31), September (1–30), October (1–15).

TABLE XIII.

Sunrise from 28° to 32° N. Latitude.

Days of solar months 1–30 (first group): Tamil, Aippasi; Malayalam, Tulam; Bengal, Kartika.

Days of solar months 1–30 (second group): Tamil, Kartigai; Malayalam, Vrischikam; Bengal, Margasira.

Day of Solar year.	Lat. 28° +460″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Mathura. A.D. 1840—1920	Lat. 29° +352″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Delhi. A.D. 1840—1920	Days of solar months.	Lat. 30° +152″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Patiala. A.D. 1840—1920	Lat. 31° +332″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Simla. A.D. 1840—1920	Eng. date.	Lat. 32° —348″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Lahore. A.D. 1840—1920
187	+576	—133	+237	+580	—142	+ 80	1	+585	—151	—168	+590	—160	— 36	16 October	+595	—168	—763
188	573	166	201	577	177	42	2	582	188	208	587	199	78	17	592	210	808
189	570	200	164	574	213	3	3	579	226	249	584	239	121	18	589	253	854
190	567	233	128	571	248	— 35	4	576	264	290	581	279	164	19	586	295	899
191	564	266	92	568	284	74	5	573	302	331	578	319	207	20	583	337	944
192	561	300	55	565	319	112	6	570	339	371	575	359	250	21	580	379	989
193	557	333	17	561	355	151	7	566	377	414	571	399	293	22	576	421	1036
194	554	366	— 27	558	390	197	8	563	415	462	568	439	343	23	573	463	1088
195	550	400	72	554	426	244	9	559	452	510	564	479	394	24	569	505	1141
196	546	433	117	550	461	290	10	555	490	559	560	519	444	25	565	547	1193
197	542	466	162	546	497	337	11	551	528	608	556	559	495	26	561	589	1246
198	538	499	206	542	532	384	12	547	565	656	552	598	546	27	557	631	1299
199	534	533	251	538	568	431	13	543	603	705	548	638	597	28	553	674	1352
200	529	566	297	533	603	499	14	538	641	755	543	678	649	29	548	716	1406
201	524	599	343	528	639	520	15	533	679	805	538	718	700	30	543	758	1459
202	520	633	388	524	674	573	16	529	716	858	534	758	751	31	539	800	1512
203	515	666	434	519	710	621	17	524	754	903	529	798	803	1 November	534	842	1566
204	509	699	481	513	745	670	18	518	792	954	523	838	856	2	528	884	1621
205	504	733	527	508	781	718	19	513	829	1003	518	878	908	3	523	926	1675
206	499	766	573	503	816	765	20	508	867	1053	513	918	959	4	518	968	1728
207	495	799	618	499	852	812	21	504	905	1102	509	958	1010	5	514	1010	1781
208	489	832	664	493	887	861	22	498	942	1152	503	997	1063	6	508	1052	1836
209	483	866	711	487	923	910	23	492	980	1203	497	1037	1116	7	502	1095	1891
210	477	899	758	481	958	959	24	486	1018	1254	491	1077	1169	8	496	1137	1946
211	471	932	805	477	994	1005	25	480	1056	1305	485	1117	1221	9	490	1179	1960
212	468	966	849	473	1029	1052	26	474	1093	1355	479	1157	1275	10	483	1221	2056
213	465	1000	893	469	1064	1099	27	473	1132	1401	478	1196	1322	11	481	1264	2107
214	462	1041	937	465	1107	1136	28	467	1177	1452	471	1243	1376	12	474	1313	2163
215	455	1082	985	458	1150	1196	29	460	1221	1503	464	1290	1430	13	467	1362	2219
216	448	1123	1033	451	1192	1245	30	453	1266	1555	457	1336	1483	14	460	1410	2274
217	441	1164	1081	444	1235	1295	1	446	1311	1607	450	1383	1537	15	453	1459	2330
218	434	1204	1128	437	1278	1345	2	439	1355	1658	443	1430	1591	16	446	1508	2386
219	426	1245	1177	429	1321	1396	3	431	1400	1711	435	1477	1646	17	438	1557	2443
220	419	1286	1225	422	1364	1446	4	424	1445	1763	428	1524	1700	18	431	1606	2499
221	411	1327	1315	414	1406	1496	5	416	1490	1816	420	1570	1758	19	423	1654	2555
222	403	1368	1365	406	1449	1567	6	408	1534	1868	412	1617	1809	20	415	1703	2612
223	395	1409	1373	398	1492	1598	7	400	1579	1920	404	1664	1864	21	407	1752	2669
224	387	1450	1407	390	1535	1641	8	392	1624	1963	396	1711	1908	22	399	1801	2714
225	379	1491	1457	382	1578	1683	9	384	1668	2007	388	1758	1952	23	391	1850	2759
226	371	1532	1499	374	1620	1726	10	376	1713	2050	380	1804	1997	24	383	1898	2804
227	362	1573	1462	365	1663	1770	11	367	1758	2095	371	1851	2042	25	374	1947	2850
228	354	1613	1583	357	1706	1812	12	359	1802	2138	363	1898	2087	26	366	1996	2895
229	345	1654	1626	348	1749	1856	13	350	1847	2183	354	1945	2131	27	357	2045	2941
230	336	1695	1669	339	1792	1900	14	341	1892	2227	345	1992	2176	28	348	2094	2987
231	327	1736	1712	330	1834	1944	15	332	1937	2272	336	2038	2222	29	339	2142	3033
232	318	1777	1735	321	1877	1987	16	323	1981	2316	327	2085	2267	30	330	2191	3079
233	309	[illegible]	1798	312	1920	2031	17	314	2026	2361	318	2132	2312	1 December	321	2240	3125
234	299	[illegible]	1842	302	1963	2076	18	304	2071	2406	308	2179	2358	2	311	2289	3172
235	290	1900	1885	293	2006	2119	19	295	2115	2451	299	2226	2403	3	302	2338	3218
236	281	1941	1928	284	2048	2159	20	286	2160	2495	290	2272	2449	4	293	2386	3264
237	272	1982	1971	275	2091	2207	21	277	2205	2540	281	2319	2494	5	284	2435	3310
238	262	2022	2014	265	2134	2251	22	267	2249	2585	271	2366	2540	6	274	2484	3357
239	252	2063	2058	255	2177	2296	23	257	2294	2631	261	2413	2586	7	264	2533	3404
240	243	2104	2101	246	2220	2340	24	248	2339	2675	252	2460	2631	8	255	2582	3456
241	233	2145	2165	236	2262	2385	25	238	2384	2721	242	2506	2678	9	244	2630	3498
242	223	2186	2189	226	2305	2429	26	228	2428	2766	232	2553	2724	10	234	2679	3545
243	207	2228	2239	208	2348	2482	27	208	2472	2822	209	2600	2783	11	210	2728	3606
244	198	2262	2282	199	2383	2526	28	199	2507	2866	200	2636	2828	12	201	2765	3652
245	188	2296	2326	189	2417	2570	29	189	2543	2912	190	2672	2867	13	191	2802	3699
246	178	2330	2370	179	2452	2615	30	179	2578	2957	180	2709	2921	14	181	2839	3746

TABLE XIII.

Sunrise from 28° to 32° N. Latitude.

Day of Solar year.	Lat. 28° +460″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Mathura. A.D. 1840—1920	Lat. 29° +352″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Delhi. A.D. 1840—1920
247	+168	—2364	—2414	+169	—2487	—2660
248	158	2397	2457	159	2521	2704
249	148	2431	2501	149	2556	2749
250	138	2465	2545	139	2591	2794
251	128	2499	2589	129	2626	2839
252	118	2533	2633	119	2660	2883
253	108	2567	2677	109	2695	2929
254	98	2601	2722	99	2730	2973
255	88	2635	2733	89	2764	2983
256	78	2669	2744	79	2799	2993
257	68	2703	2775	69	2834	3003
258	58	2736	2766	59	2868	3013
259	47	2770	2778	48	2903	3025
260	37	2804	2790	38	2938	3035
261	27	2838	2801	28	2973	3045
262	17	2872	2812	18	3007	3055
263	2	2906	2828	2	3042	3071
264	— 11	2940	2842	— 11	3077	3084
265	21	2974	2853	21	3111	3094
266	35	3008	2868	36	3146	3110
267	45	3042	2879	46	3181	3120
268	55	3075	2890	56	3215	3130
269	66	3109	2902	67	3250	3141
270	76	3143	2914	77	3285	3151
271	87	3177	2926	88	3320	3162
272	97	3211	2937	98	3354	3172
273	107	3245	2948	108	3390	3182
274	100	3280	2942	100	3424	3173
275	106	3281	2949	106	3424	3181
276	112	3282	2956	112	3424	3187
277	118	3283	2963	118	3424	3193
278	124	3284	2970	124	3424	3199
279	130	3285	2977	130	3425	3205
280	136	3287	2985	136	3425	3211
281	142	3288	2992	142	3425	3217
282	148	3289	2999	148	3425	3224
283	154	3290	3006	154	3425	3230
284	160	3291	2992	160	3425	3236
285	166	3292	2977	166	3425	3199
286	172	3293	2942	172	3426	3163
287	178	3294	2907	178	3426	3126
288	184	3295	2872	184	3426	3089
289	190	3296	2837	190	3426	3052
290	196	3298	2803	196	3426	3016
291	202	3299	2768	202	3426	2979
292	208	3300	2733	208	3426	2942
293	214	3301	2698	214	3426	2906
294	220	3302	2663	220	3426	2869
295	226	3303	2628	226	3427	2832
296	232	3304	2593	232	3427	2796
297	238	3305	2558	238	3427	2759
298	244	3306	2523	244	3427	2722
299	250	3307	2488	250	3427	2685
300	256	3309	2454	256	3427	2649
301	262	3310	2419	262	3427	2612
302	268	3311	2384	268	3428	2575
303	274	3312	2349	273	3428	2538
304	280	3312	2314	278	3428	2500
305	282	3271	2275	280	3385	2459

Solar month	Days of solar months.	Lat. 30° +152″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Patiala. A.D. 1840—1920	Lat. 31° +332″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Simla. A.D. 1840—1920	Eng. month	Eng. date.	Lat. 32° —348″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. Lahore. A.D. 1840—1920
Tamil, Margali; Malayalam Dhanus; Bengal Pausha.	1	+169	—2614	—3003	+170	—2745	—2962	December.	15	+171	—2876	—3793
	2	159	2649	3048	160	2781	3013		16	161	2913	3840
	3	149	2685	3094	150	2817	3059		17	151	2950	3887
	4	139	2720	3139	140	2853	3105		18	141	2987	3934
	5	129	2756	3185	130	2890	3152		19	131	3024	3981
	6	119	2791	3230	120	2926	3198		20	121	3061	4028
	7	109	2827	3276	110	2962	3244		21	111	3098	4075
	8	99	2862	3321	100	2998	3292		22	101	3135	4123
	9	89	2898	3330	90	3034	3300		23	91	3172	4131
	10	79	2933	3340	80	3071	3309		24	81	3209	4136
	11	69	2969	3349	70	3107	3317		25	71	3246	4146
	12	59	3004	3358	60	3143	3326		26	61	3283	4154
	13	48	3040	3368	49	3179	3335		27	50	3320	4162
	14	38	3075	3378	39	3215	3344		28	40	3357	4170
	15	28	3111	3387	29	3252	3352		29	30	3394	4178
	16	18	3146	3396	19	3288	3361		30	20	3431	4186
	17	2	3182	3412	2	3324	3376		31	4	3468	4199
	18	— 11	3217	3424	— 11	3360	3388		1	— 12	3505	4213
	19	21	3253	3433	21	3396	3396		2	28	3542	4226
	20	36	3288	3448	37	3433	3412		3	38	3579	4234
	21	46	3324	3457	47	3469	3421		4	48	3616	4242
	22	56	3359	3466	57	3505	3429		5	58	3653	4250
	23	67	3395	3476	68	3541	3439		6	69	3690	4258
	24	77	3430	3486	78	3577	3447		7	79	3727	4266
	25	88	3466	3496	89	3614	3457		8	90	3764	4275
	26	98	3501	3505	99	3650	3465		9	100	3801	4283
	27	108	3537	3515	109	3686	3474		10	110	3838	4290
	28	100	3572	3506	98	3724	3460		11	98	3876	4275
	29	106	3571	3511	104	3722	3464		12	104	3874	4280
Tamil, Tai; Malayalam, Magaram; Bengal, Magha.	1	112	3571	3517	110	3721	3469	January.	13	110	3871	4283
	2	118	3570	3522	116	3719	3473		14	116	3869	4287
	3	124	3569	3526	122	3718	3478		15	122	3867	4291
	4	130	3568	3532	128	3716	3482		16	128	3864	4294
	5	136	3568	3537	134	3715	3487		17	134	3862	4298
	6	142	3567	3543	140	3713	3491		18	140	3860	4302
	7	148	3566	3548	146	3712	3496		19	146	3858	4306
	8	154	3566	3554	152	3710	3500		20	152	3855	4309
	9	160	3565	3560	158	3709	3506		21	158	3853	4314
	10	166	3564	3523	164	3707	3465		22	164	3850	4271
	11	172	3564	3483	170	3706	3425		23	170	3848	4229
	12	178	3563	3444	176	3704	3384		24	176	3846	4186
	13	184	3562	3406	182	3703	3344		25	182	3844	4144
	14	190	3561	3367	188	3701	3303		26	188	3841	4101
	15	196	3561	3329	194	3700	3262		27	194	3839	4059
	16	202	3560	3290	200	3698	3222		28	200	3837	4016
	17	208	3559	3252	206	3697	3181		29	206	3835	3974
	18	214	3559	3213	212	3695	3141		30	212	3832	3931
	19	220	3558	3175	218	3694	3100		31	218	3830	3889
	20	226	3557	3136	224	3692	3059	February.	1	223	3828	3845
	21	232	3557	3098	230	3691	2999		2	229	3825	3803
	22	238	3556	3059	235	3689	2977		3	234	3823	3759
	23	244	3555	3021	240	3688	2936		4	239	3821	3716
	24	250	3554	2992	245	3686	2894		5	244	3818	3672
	25	255	3554	2943	250	3685	2852		6	249	3816	3631
	26	260	3553	2903	255	3683	2807		7	254	3814	3585
	27	265	3552	2864	260	3682	2769		8	260	3812	3543
	28	270	3552	2824	266	3680	2729		9	265	3809	3499
	29	276	3552	2786	272	3680	2688		10	270	3808	3456
	30	278	3507	2743	274	3633	2643		11	272	3759	3419

TABLE XIII.

Sunrise from 28° to 32° N. Latitude.

Day of Solar year.	Lat. 28° Eqn. of time in seconds.	Lat. 28° ☉'s Trop. Long. in seconds.	Lat. 28° +460″ Long. Total Corrn. in seconds. Mathura. A.D. 1840—1920	Lat. 29° Eqn. of time in seconds.	Lat. 29° ☉'s Trop. Long. in seconds.	Lat. 29° +352″ Long. Total Corrn. in seconds. Delhi. A.D. 1840—1920	Days of solar months.	Lat. 30° Eqn. of time in seconds.	Lat. 30° ☉'s Trop. Long. in seconds.	Lat. 30° +152″ Long. Total Corrn. in seconds. Patiala. A.D. 1840—1920	Lat. 31° Eqn. of time in seconds.	Lat. 31° ☉'s Trop. Long. in seconds.	Lat. 31° +332″ Long. Total Corrn. in seconds. Simla. A.D. 1840—1920	Eng. date.	Lat. 32° Eqn. of time in seconds.	Lat. 32° ☉'s Trop. Long. in seconds.	Lat. 32° —348″ Long. Total Corrn. in seconds. Lahore. A.D. 1840—1920
306	—285	—3230	—2237	—283	—3343	—2420	1 (Tamil, Masi; Malayalam, Kumbam; Bengal, Phalguna.)	—280	—3463	—2701	—276	—3587	—2599	12 (February)	—274	—3711	—3363
307	287	3189	2198	285	3300	2379	2	283	3418	2659	279	3540	2556	13	276	3662	3316
308	290	3148	2160	288	3257	2339	3	285	3374	2617	281	3494	2511	14	278	3614	3270
309	292	3107	2121	290	3214	2298	4	287	3329	2574	283	3447	2466	15	281	3565	3224
310	295	3067	2084	293	3172	2264	5	290	3285	2533	286	3400	2422	16	283	3517	3178
311	297	3026	2045	295	3129	2218	6	292	3240	2490	288	3354	2378	17	285	3468	3131
312	300	2985	2007	298	3086	2168	7	294	3196	2448	290	3307	2333	18	287	3420	3085
313	302	2944	1968	300	3044	2138	8	297	3151	2406	293	3261	2290	19	289	3371	3038
314	305	2903	1930	303	3001	2098	9	299	3107	2364	295	3214	2245	20	292	3323	2993
315	307	2862	1891	305	2958	2057	10	301	3062	2321	297	3167	2201	21	294	3274	2946
316	310	2821	1826	308	2916	1990	11	304	3018	2252	300	3121	2129	22	296	3226	2871
317	312	2780	1760	310	2873	1922	12	306	2973	2181	302	3074	2057	23	298	3177	2796
318	315	2739	1695	313	2830	1855	13	308	2929	2111	304	3028	1984	24	300	3129	2722
319	317	2698	1629	315	2787	1787	14	311	2884	2041	307	2981	1913	25	303	3080	2648
320	320	2658	1567	318	2745	1719	15	313	2840	1971	309	2934	1840	26	305	3032	2573
321	322	2617	1497	320	2702	1651	16	315	2795	1901	311	2888	1768	27	307	2983	2498
322	325	2576	1432	323	2659	1584	17	318	2751	1831	314	2841	1696	28	309	2935	2423
323	327	2535	1366	325	2617	1515	18	320	2706	1761	316	2795	1624	1 (March)	311	2866	2349
324	330	2494	1301	328	2574	1449	19	322	2662	1690	318	2748	1551	2	314	2838	2275
325	332	2453	1235	330	2531	1381	20	325	2617	1621	321	2701	1480	3	316	2789	2200
326	335	2412	1170	332	2489	1313	21	327	2573	1551	323	2655	1407	4	318	2741	2125
327	337	2371	1104	334	2446	1245	22	329	2528	1480	325	2608	1335	5	320	2692	2050
328	340	2330	1039	336	2403	1177	23	331	2484	1410	327	2562	1264	6	322	2644	1976
329	342	2289	973	338	2360	1109	24	333	2439	1339	329	2515	1190	7	324	2595	1901
330	345	2249	908	340	2318	1040	25	335	2395	1269	331	2468	1117	8	326	2547	1826
331	347	2208	841	342	2275	972	26	337	2350	1199	333	2422	1045	9	328	2498	1851
332	349	2167	775	344	2232	904	27	339	2306	1128	335	2375	972	10	330	2450	1676
333	351	2126	709	346	2190	836	28	341	2261	1058	337	2329	900	11	332	2401	1602
334	353	2085	643	348	2147	768	29	343	2217	987	339	2282	827	12	334	2353	1527
335	355	2044	577	350	2104	700	1 (Tamil, Panguni; Malayalam, Meenam; Bengal, Chaitra.)	345	2172	917	341	2236	755	13	336	2304	1452
336	355	1976	509	350	2034	630	2	345	2100	845	341	2161	680	14	336	2227	1375
337	356	1908	442	351	1964	561	3	346	2027	773	342	2087	607	15	337	2150	1299
338	356	1840	374	351	1894	491	4	346	1955	701	342	2012	532	16	337	2074	1223
339	357	1772	307	352	1824	422	5	347	1882	629	343	1938	459	17	338	1997	1147
340	357	1704	239	352	1753	351	6	347	1810	557	343	1863	384	18	338	1920	1070
341	358	1635	171	353	1683	282	7	348	1738	486	344	1789	311	19	339	1843	994
342	358	1567	103	353	1613	212	8	348	1665	413	344	1714	236	20	339	1766	917
343	359	1499	36	354	1543	143	9	349	1593	342	345	1640	153	21	340	1690	842
344	359	1431	+ 32	354	1473	73	10	349	1520	269	345	1565	88	22	340	1613	765
345	360	1363	100	355	1403	3	11	350	1448	198	346	1491	14	23	341	1536	689
346	360	1295	168	355	1333	+ 66	12	350	1376	126	346	1416	+ 61	24	341	1459	612
347	361	1227	235	356	1263	135	13	351	1303	54	347	1342	134	25	342	1382	536
348	361	1159	303	356	1193	205	14	351	1231	+ 18	347	1267	209	26	342	1306	460
349	362	1091	370	357	1123	274	15	352	1158	90	348	1193	282	27	343	1229	384
350	362	1023	439	357	1052	346	16	352	1086	162	348	1118	357	28	343	1152	307
351	363	954	506	357	982	415	17	352	1014	234	349	1044	430	29	344	1175	231
352	363	886	574	358	912	485	18	353	941	306	349	969	505	30	344	998	154
353	364	818	641	358	842	554	19	353	869	379	349	895	579	31	344	922	78
354	364	750	709	358	772	626	20	353	796	451	350	820	653	1 (April)	345	845	2
355	365	682	776	359	702	694	21	354	724	522	350	746	727	2	345	768	+ 75
356	365	614	844	359	632	765	22	354	652	594	350	671	802	3	345	691	152
357	366	546	911	360	562	833	23	354	579	667	351	597	875	4	346	614	228
358	366	478	979	360	492	903	24	355	507	738	351	522	950	5	346	538	304
359	367	410	1046	360	422	973	25	355	434	821	351	448	1024	6	346	461	381
360	367	342	1115	361	351	1042	26	355	362	876	352	373	1098	7	347	384	457
361	368	273	1182	361	281	1113	27	356	290	954	352	299	1172	8	347	307	534
362	368	205	1250	361	211	1183	28	356	317	1027	352	224	1247	9	347	230	611
363	368	137	1318	362	141	1252	29	356	145	1099	353	150	1320	10	348	154	686
364	367	69	1387	362	71	1322	30	357	72	1171	353	75	1395	11	348	77	763
365	367	0	1455	362	0	1392	31	357	0	1243	353	0	1469	12	348	0	840

TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Lat. 33° −480″ Long. · Lat. 34° −228″ Long. · Lat. 35° −1592″ Long. · Lat. 19° −692″ Long. · Lat. 22·5° +3020″ Long.

Solar months (days 1–30): Tamil, Chittirai; Malayalam, Medam; Bengal, Vaisakha.
Solar months (days 31–62): Tamil, Vaikasi; Malayalam, Edavam; Bengal, Jyeshta.

Day of Solar year.	Eqn. of time in seconds. (Lat. 33°)	⊙'s Trop. Long. in seconds. (Lat. 33°)	Total Corrn. in seconds. Jehlum. A.D. 1840—1920	Eqn. of time in seconds. (Lat. 34°)	⊙'s Trop. Long. in seconds. (Lat. 34°)	Total Corrn. in seconds. Srinagar. A.D. 1840—1920	Days of solar months.	Eqn. of time in seconds. (Lat. 35°)	⊙'s Trop. Long. in seconds. (Lat. 35°)	Total Corrn. in seconds. Kabul. A.D. 1840—1920	Eqn. of time in seconds. (Lat. 19°)	⊙'s Trop. Long. in seconds. (Lat. 19°)	Total Corrn. in seconds. Bombay. A.D. 1840—1920	Eng. date.	Eqn. of time in seconds. (Lat. 22·5°)	⊙'s Trop. Long. in seconds. (Lat. 22·5°)	Total Corrn. in seconds. Calcutta. A.D. 1840—1920
1	−343	+ 79	+ 840	−338	+ 82	+1148	1	− 333	+ 84	−161	−405	+ 50	− 47	13 April	−391	+ 57	+3891
2	341	158	921	336	163	1231	2	331	168	75	403	100	+ 5	14	389	113	3877
3	340	238	1002	335	245	1314	3	330	252	+ 10	401	150	57	15	387	170	3936
4	339	317	1082	334	326	1396	4	329	336	95	400	200	108	16	386	227	3993
5	337	396	1163	332	408	1480	5	328	420	180	398	250	160	17	384	283	4052
6	336	475	1243	331	490	1563	6	327	504	265	396	300	212	18	382	340	4111
7	334	554	1324	330	571	1645	7	325	588	351	394	350	264	19	380	396	4170
8	332	634	1406	328	653	1729	8	323	672	437	392	400	316	20	378	453	4229
9	330	713	1487	326	734	1812	9	321	756	523	390	450	368	21	375	510	4289
10	328	792	1568	324	816	1896	10	319	840	609	387	500	421	22	373	567	4347
11	326	871	1620	321	898	1951	11	317	924	665	385	550	450	23	371	623	4381
12	324	950	1673	319	979	2005	12	315	1008	721	382	600	479	24	369	679	4415
13	322	1030	1725	317	1061	2059	13	313	1092	778	380	650	508	25	366	736	4450
14	319	1109	1778	315	1142	2112	14	310	1176	835	377	700	538	26	363	792	4485
15	316	1188	1832	312	1224	2167	15	308	1260	891	374	750	568	27	360	850	4520
16	314	1267	1884	310	1306	2221	16	306	1344	947	371	800	597	28	357	906	4555
17	312	1346	1936	308	1387	2275	17	304	1428	1003	367	850	628	29	354	962	4590
18	310	1426	1989	306	1469	2329	18	302	1512	1059	364	900	658	30	352	1019	4624
19	308	1505	2041	304	1550	2383	19	300	1596	1116	361	950	687	1	348	1072	4660
20	306	1584	2093	302	1632	2437	20	298	1680	1172	357	1000	718	2	344	1133	4696
21	304	1663	2145	300	1714	2491	21	296	1764	1228	354	1050	748	3	341	1190	4731
22	302	1742	2198	298	1795	2544	22	294	1848	1284	350	1100	778	4	338	1246	4766
23	300	1822	2250	296	1877	2598	23	292	1932	1340	346	1150	809	5	335	1303	4801
24	298	1901	2302	294	1958	2652	24	290	2016	1397	342	1200	840	6	333	1359	4835
25	296	1980	2355	292	2040	2706	25	288	2100	1453	338	1250	870	7	330	1416	4870
26	294	2059	2407	290	2122	2760	26	286	2184	1509	334	1300	901	8	327	1473	4904
27	292	2138	2459	288	2203	2814	27	284	2268	1565	330	1350	932	9	324	1530	4940
28	290	2218	2512	286	2285	2868	28	282	2352	1621	326	1400	963	10	321	1587	4975
29	288	2297	2564	284	2366	2921	29	280	2436	1678	322	1450	993	11	318	1644	5010
30	286	2376	2616	282	2448	2975	30	278	2520	1734	354	1500	988	12	334	1700	5026
31	284	2426	2669	280	2500	3029	1	276	2574	1790	349	1527	1020	13	331	1732	5061
32	282	2477	2721	278	2552	3083	2	274	2628	1846	344	1553	1051	14	327	1764	5097
33	280	2527	2773	276	2604	3137	3	272	2683	1902	339	1580	1083	15 May	324	1796	5132
34	278	2577	2826	274	2655	3201	4	270	2737	1959	323	1607	1116	16	320	1828	5168
35	276	2628	2878	272	2707	3245	5	268	2791	2015	328	1634	1147	17	316	1860	5204
36	274	2678	2930	270	2759	3299	6	266	2845	2071	322	1660	1180	18	313	1892	5239
37	272	2728	2983	268	2811	3352	7	264	2899	2127	316	1687	1213	19	308	1924	5276
38	270	2779	3035	266	2863	3406	8	262	2953	2183	311	1714	1245	20	303	1956	5313
39	269	2829	3086	264	2915	3460	9	260	3008	2240	305	1740	1277	21	297	1988	5351
40	264	2879	3142	261	2967	3515	10	258	3062	2296	299	1767	1310	22	291	2020	5389
41	260	2929	3196	258	3019	3570	11	256	3116	2352	293	1794	1343	23	285	2052	5427
42	254	2980	3205	252	3070	3580	12	250	3170	2363	286	1820	1343	24	279	2084	5428
43	247	3030	3215	245	3122	3591	13	243	3224	2375	280	1847	1342	25	273	2116	5429
44	242	3080	3224	240	3174	3600	14	237	3279	2385	274	1874	1340	26	267	2148	5430
45	236	3131	3233	234	3226	3610	15	231	3333	2396	267	1900	1341	27	260	2180	5432
46	231	3181	3241	228	3278	3620	16	226	3387	2406	261	1927	1339	28	254	2211	5434
47	224	3231	3251	222	3330	3630	17	219	3441	2418	254	1954	1339	29	247	2244	5436
48	218	3282	3260	216	3382	3640	18	213	3495	2429	247	1981	1339	30	241	2276	5437
49	212	3332	3270	210	3433	3650	19	208	3550	2438	241	2007	1338	31	235	2308	5438
50	207	3382	3278	205	3485	3659	20	203	3604	2448	234	2034	1338	1	228	2340	5440
51	201	3433	3287	199	3537	3669	21	197	3658	2459	227	2061	1338	2	221	2372	5443
52	195	3483	3296	193	3589	3679	22	191	3712	2470	220	2087	1338	3	214	2404	5445
53	188	3533	3306	186	3641	3690	23	184	3766	2482	213	2114	1338	4	207	2436	5447
54	182	3584	3316	180	3693	3700	24	178	3821	2492	206	2141	1338	5	200	2468	5449
55	176	3634	3325	177	3745	3707	25	176	3875	2499	199	2167	1336	6	193	2500	5451
56	172	3684	3332	174	3797	3714	26	172	3929	2508	192	2194	1337	7 June	186	2532	5454
57	169	3735	3338	171	3848	3721	27	168	3983	2517	184	2221	1338	8	179	2564	5456
58	166	3785	3344	168	3900	3728	28	164	4037	2526	177	2248	1338	9	174	2596	5456
59	163	3835	3351	165	3952	3735	29	160	4092	2534	169	2274	1339	10	168	2628	5457
60	160	3886	3357	162	4004	3742	30	156	4146	2543	162	2301	1339	11	162	2660	5458
61	157	3936	3363	159	4056	3749	31	152	4200	2552	179	2328	1315	12	171	2692	5445
62	154	3939	3369	156	4060	3756	32	148	4205	2561	171	2321	1316	13	164	2687	5447

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33°—480″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Jehlum.** A.D. 1840—1920	Lat. 34°—228″ Long. Eqn. of time in seconds.	☉'s Trop. Long in seconds.	Total Corrn. in seconds. **Srinagar.** A.D. 1840—1920	Solar months	Days of solar months.	Lat. 35°—1592″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Kabul.** A.D 1840—1920	Lat. 19°—692″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Bombay.** A.D. 1840—1920	Eng. month	**Eng. date.**	Lat. 22·5°+3020″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Calcutta.** A.D. 1840—1920
63	—151	+3942	+3375	—153	+4064	+3763	*Tamil, Ani; Malayalam, Mithunam; Bengal, Ashada.*	1	—144	+4210	+2570	—162	+2384	+1318	June	**14**	—159	+2682	+5447
64	148	3946	3382	150	4068	3778		2	140	4214	2578	153	2306	1320		**15**	151	2677	5450
65	138	3949	3395	138	4072	3786		3	137	4219	2589	144	2300	1322		**16**	143	2672	5453
66	130	3952	3406	130	4076	3798		4	130	4224	2598	135	2292	1323		**17**	134	2668	5457
67	121	3955	3418	120	4080	3812		5	120	4229	2613	126	2285	1325		**18**	125	2663	5462
68	112	3958	3430	112	4084	3824		6	112	4234	2626	117	2278	1327		**19**	116	2658	5466
69	103	3962	3443	103	4088	3837		7	103	4238	2639	108	2271	1329		**20**	107	2653	5470
70	95	3965	3454	94	4092	3850		8	94	4243	2653	99	2264	1331		**21**	96	2648	5476
71	86	3968	3466	85	4096	3863		9	85	4248	2667	89	2257	1335		**22**	88	2644	5480
72	77	3971	3437	76	4100	3833		10	76	4253	2636	80	2250	1316		**23**	79	2639	5458
73	68	3974	3408	68	4104	3803		11	68	4258	2605	71	2243	1297		**24**	70	2634	5437
74	58	3978	3380	58	4108	3774		12	58	4262	2575	61	2236	1285		**25**	61	2629	5416
75	51	3981	3343	50	4112	3743		13	50	4267	2544	53	2227	1259		**26**	53	2624	5394
76	41	3984	3321	41	4116	3713		14	41	4272	2514	42	2221	1242		**27**	42	2620	5375
77	32	3987	3292	32	4120	3684		15	32	4277	2483	33	2214	1223		**28**	33	2615	5353
78	23	3990	3263	23	4124	3654		16	23	4282	2453	24	2207	1204		**29**	24	2610	5332
79	14	3994	3234	14	4128	3624		17	14	4286	2422	15	2200	1185		**30**	15	2605	5312
80	5	3997	3206	5	4132	3595		18	5	4291	2392	5	2193	1167	July	**1**	5	2600	5291
81	+ 4	4000	3177	+ 4	4136	3565		19	+ 4	4296	2361	+ 4	2186	1148		**2**	+ 4	2596	5270
82	13	4003	3148	13	4140	3535		20	13	4301	2331	13	2179	1129		**3**	13	2591	5248
83	22	4006	3119	22	4144	3505		21	22	4306	2300	23	2172	1111		**4**	23	2586	5288
84	30	4010	3089	30	4148	3475		22	30	4310	2266	32	2165	1092		**5**	32	2581	5207
85	40	4013	3061	40	4152	3446		23	40	4315	2236	42	2158	1074		**6**	42	2576	5187
86	49	4016	3032	48	4156	3415		24	48	4320	2203	51	2150	1055		**7**	51	2571	5166
87	57	4019	3002	57	4160	3386		25	57	4325	2174	60	2143	1036		**8**	60	2567	5144
88	67	4022	2974	66	4164	3356		26	66	4330	2145	70	2136	1026		**9**	69	2562	5123
89	76	4026	2945	75	4168	3326		27	75	4334	2116	79	2129	1007		**10**	78	2557	5102
90	84	4029	2915	84	4172	3296		28	84	4339	2086	88	2122	980		**11**	87	2552	5081
91	110	4032	2903	111	4176	3285		29	111	4344	2073	106	2116	970		**12**	107	2548	5071
92	121	3994	2876	121	4137	3256		30	121	4304	2044	116	2088	952		**13**	117	2517	5050
93	131	3956	2848	132	4099	3228		31	132	4265	2015	126	2060	934		**14**	127	2487	5030
94	141	3918	2820	141	4060	3199		32	142	4225	1986	136	2038	916		**15**	137	2457	5010
95	151	3880	2792	151	4021	3170	*Tamil, Adi; Malayalam, Karkatagam; Bengal, Sravana.*	1	152	4186	1956	146	2004	898		**16**	147	2427	4990
96	162	3842	2766	162	3982	3142		2	163	4147	1928	156	1976	880		**17**	157	2397	4970
97	172	3804	2738	172	3944	3113		3	173	4107	1898	166	1948	862		**18**	167	2366	4949
98	182	3766	2710	182	3905	3085		4	183	4068	1869	175	1920	843		**19**	177	2336	4929
99	192	3728	2662	193	3866	3057		5	193	4028	1839	185	1892	825		**20**	187	2307	4909
100	202	3691	2654	202	3828	3027		6	203	3989	1810	194	1864	806		**21**	196	2276	4888
101	211	3653	2625	212	3789	2999		7	212	3949	1779	204	1836	788		**22**	205	2246	4867
102	221	3615	2597	222	3750	2970		8	222	3910	1750	263	1808	769		**23**	215	2215	4847
103	231	3577	2557	232	3711	2928		9	232	3870	1706	223	1780	753		**24**	224	2185	4824
104	242	3539	2517	243	3673	2887		10	244	3831	1663	232	1752	735		**25**	235	2155	4803
105	251	3501	2476	252	3634	2844		11	253	3791	1618	242	1724	719		**26**	244	2125	4780
106	261	3463	2435	262	3595	2802		12	263	3752	1573	251	1696	702		**27**	253	2095	4758
107	270	3425	2394	271	3557	2759		13	272	3712	1528	260	1668	684		**28**	261	2064	4735
108	278	3387	2352	279	3518	2715		14	280	3673	1482	269	1640	667		**29**	271	2034	4714
109	288	3349	2311	288	3479	2672		15	289	3633	1436	278	1620	650		**30**	280	2004	4692
110	297	3311	2270	297	3440	2629		16	298	3594	1391	287	1584	633		**31**	290	1974	4671
111	305	3273	2227	305	3402	2585		17	306	3554	1344	295	1556	614	August	**1**	297	1944	4647
112	315	3235	2187	316	3363	2544		18	316	3515	1300	304	1528	587		**2**	306	1913	4625
113	324	3197	2146	325	3324	2501		19	326	3475	1257	312	1500	579		**3**	315	1883	4603
114	333	3159	2104	334	3286	2468		20	335	3436	1210	321	1472	561		**4**	324	1853	4581
115	342	3121	2163	343	3247	2415		21	344	3396	1165	329	1444	543		**5**	332	1823	4558
116	350	3084	2020	351	3208	2371		22	352	3357	1118	338	1416	526		**6**	340	1793	4535
117	359	3046	1979	360	3169	2328		23	361	3317	1073	346	1388	507		**7**	348	1762	4512
118	367	3008	1937	368	3131	2284		24	369	3278	1027	354	1360	489		**8**	357	1732	4490
119	375	2970	1894	376	3092	2240		25	377	3238	980	362	1332	471		**9**	364	1702	4466
120	383	2932	1852	384	3053	2196		26	385	3199	934	369	1304	452		**10**	372	1672	4443
121	408	2894	1898	411	3015	2171		27	414	3159	908	373	1276	429		**11**	381	1642	4421
122	416	2856	1784	419	2976	2127		28	422	3120	862	381	1248	411		**12**	388	1612	4397
123	424	2806	1742	427	2924	2083		29	430	3066	816	388	1222	392		**13**	396	1580	4374
124	432	2755	1699	435	2872	2039		30	438	3011	769	396	1195	373		**14**	404	1548	4351
125	439	2705	1656	442	2820	1994		31	445	2957	722	403	1169	354		**15**	411	1516	4327

TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33°—480″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Jhelum. A.D. 1840—1920	Lat. 34°—228″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Srinagar. A.D. 1840—1920	Solar months (printed sideways)	Days of solar months.	Lat. 35°—1592″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Kabul. A.D. 1840—1920	Lat. 19°—692″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Bombay. A.D. 1840—1920	English months (printed sideways)	Eng. date.	Lat. 22·5°+3020″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Calcutta. A.D. 1840—1920
126	+447	+2654	+1613	+450	+2768	+1950	*Bengal*, Bhadrapada.	1	+453	+2902	+675	+410	+1143	+335	August.	**16**	+419	+1485	**+4304**
127	455	2604	1571	458	2716	1906		2	461	2848	629	417	1116	315		**17**	425	1454	**4276**
128	462	2554	1528	465	2664	1861		3	468	2794	582	424	1090	296		**18**	432	1423	**4252**
129	469	2503	1484	472	2612	1816		4	475	2739	534	430	1064	276		**19**	439	1392	**4227**
130	476	2453	1441	479	2560	1771		5	482	2685	487	437	1038	257		**20**	446	1361	**4201**
131	483	2402	1397	486	2508	1726		6	489	2630	439	443	1011	236		**21**	452	1330	**4176**
132	490	2352	1354	493	2456	1681		7	496	2576	392	450	985	218		**22**	458	1299	**4150**
133	497	2302	1318	500	2404	1642		8	503	2522	351	456	959	209		**23**	465	1268	**4136**
134	503	2251	1280	506	2352	1603		9	509	2467	309	462	932	200		**24**	471	1237	**4120**
135	509	2201	1243	512	2300	1563		10	515	2413	267	468	906	192		**25**	477	1206	**4104**
136	515	2150	1206	518	2248	1523	*Tamil*, Avani; *Malayalam*, Chingam;	11	521	2358	225	474	880	183		**26**	483	1175	**4068**
137	521	2100	1168	524	2196	1484		12	527	2304	183	479	853	173		**27**	488	1144	**4072**
138	527	2050	1131	530	2144	1444		13	533	2250	141	485	827	164		**28**	493	1113	**4055**
139	533	1999	1093	536	2092	1404		14	539	2195	99	490	801	154		**29**	500	1082	**4041**
140	538	1949	1055	541	2040	1364		15	544	2141	56	495	775	145		**30**	505	1051	**4023**
141	544	1898	1018	547	1988	1324		16	550	2086	14	500	748	135		**31**	510	1020	**4007**
142	549	1848	979	552	1936	1283		17	555	2032	— 29	505	722	125		**1**	515	989	**3990**
143	554	1798	941	557	1884	1242		18	560	1978	72	510	696	115		**2**	520	958	**3974**
144	559	1747	903	562	1832	1202		19	565	1923	115	514	669	104		**3**	525	927	**3956**
145	564	1697	864	567	1780	1161		20	570	1869	158	519	643	95		**4**	529	896	**3939**
146	569	1646	826	573	1728	1121		21	576	1814	200	523	617	84		**5**	533	865	**3921**
147	576	1596	790	580	1676	1083		22	585	1760	239	527	590	73		**6**	537	831	**3904**
148	578	1546	748	586	1624	1045		23	591	1706	281	532	564	63		**7**	541	800	**3886**
149	580	1495	707	592	1572	1003		24	596	1651	324	536	538	52		**8**	543	768	**3866**
150	582	1445	666	595	1520	961		25	601	1597	367	539	512	41		**9**	546	735	**3847**
151	584	1394	624	596	1468	916		26	602	1542	414	542	485	29	September.	**10**	549	704	**3829**
152	586	1344	583	597	1416	871		27	603	1488	461	523	460	— 5		**11**	540	672	**3798**
153	588	1301	541	598	1370	827		28	604	1440	508	526	445	17		**12**	542	651	**3779**
154	590	1257	500	599	1325	782		29	605	1392	555	529	430	29		**13**	545	629	**3760**
155	592	1214	459	600	1279	737		30	606	1344	602	532	416	40		**14**	543	307	**3736**
156	594	1171	417	601	1233	693		31	607	1296	649	534	401	53		**15**	550	585	**3721**
157	596	1127	376	602	1188	648	*Bengal*, Asvina.	1	608	1248	696	536	386	66		**16**	552	564	**3701**
158	599	1084	336	604	1142	604		2	609	1200	743	538	371	79		**17**	554	542	**3672**
159	601	1040	294	606	1096	561		3	610	1152	790	540	356	92		**18**	556	521	**3662**
160	603	997	253	608	1051	517		4	612	1104	836	542	342	104		**19**	558	498	**3642**
161	605	954	212	610	1005	473		5	614	1056	882	544	327	120		**20**	560	477	**3622**
162	606	910	169	611	959	429		6	615	1008	929	546	312	130		**21**	561	455	**3602**
163	608	867	128	613	913	385		7	617	960	975	547	297	145		**22**	563	434	**3583**
164	610	824	85	615	868	340		8	619	912	1023	548	282	159		**23**	565	412	**3563**
165	611	780	41	616	822	294		9	620	864	1071	550	268	173		**24**	566	390	**3542**
166	611	737	— 3	616	776	246		10	620	816	1121	551	253	187		**25**	566	368	**3519**
167	612	694	47	617	731	200	*Tamil*, Purattasi; *Malayalam*, Kanni;	11	621	768	1169	552	238	201		**26**	567	347	**3498**
168	613	650	91	618	685	154		12	622	720	1218	553	223	215		**27**	567	325	**3475**
169	614	607	135	619	639	108		13	623	672	1267	554	208	230		**28**	568	303	**3454**
170	614	564	180	619	594	61		14	623	624	1316	554	194	245		**29**	569	281	**3403**
171	614	520	224	619	548	13		15	623	576	1366	554	179	260		**30**	569	260	**3410**
172	614	477	269	619	502	— 34		16	623	528	1415	454	164	276		**1**	570	238	**3389**
173	614	433	314	619	457	81		17	623	480	1465	554	149	291		**2**	569	217	**3365**
174	614	390	359	619	411	128		18	623	432	1515	554	134	306		**3**	569	195	**3343**
175	614	347	404	619	365	175		19	623	384	1564	554	120	322		**4**	569	173	**3321**
176	614	303	448	619	320	223		20	623	336	1614	554	105	337		**5**	569	151	**3298**
177	613	260	494	618	274	271		21	622	288	1664	553	90	353	October.	**6**	568	129	**3275**
178	612	217	540	617	228	319		22	621	240	1715	552	75	369		**7**	567	108	**3251**
179	611	173	586	616	183	367		23	620	192	1766	551	60	386		**8**	566	86	**3238**
180	610	130	632	615	137	415		24	619	144	1816	550	46	402		**9**	565	64	**3205**
181	608	87	678	613	91	465		25	617	96	1868	548	31	419		**10**	563	42	**3180**
182	607	43	724	612	46	513		26	616	48	1918	547	16	436		**11**	562	21	**3147**
183	607	0	769	612	0	562		27	616	0	1968	545	0	453		**12**	561	0	**3133**
184	606	— 45	815	611	— 47	608		28	616	— 50	2018	544	— 15	469		**13**	559	— 22	**3124**
185	604	90	862	609	94	657		29	614	99	2069	542	31	487		**14**	557	44	**3085**
186	602	134	908	607	142	707		30	612	149	2121	540	46	504		**15**	555	67	**3060**

TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33°—480″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Jhelum.** A.D. 1840—1920	Lat. 34°—228″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Srinagar.** A.D. 1840—1920	Days of solar months.	Lat. 35°—1592″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Kabul.** A.D. 1840—1920	Lat. 19°—692″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Bombay.** A.D. 1840—1920	**Eng. date.**	Lat. 22·5°+3020″ Long. Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds. **Calcutta.** A.D. 1840—1920
187	+600	—179	— 955	+605	— 189	— 756	1	+610	—198	—2173	+538	— 61	—511	**16**	+552	— 89	+3035
188	597	224	1003	602	236	806	2	607	248	2225	536	76	538	**17**	551	112	3011
189	604	269	1041	609	283	846	3	614	298	2268	533	92	557	**18**	548	134	2986
190	601	314	1091	606	330	896	4	611	347	2310	530	107	575	**19**	545	156	2961
191	588	358	1146	593	378	953	5	598	397	2383	527	122	593	**20**	542	179	2935
192	585	403	1194	590	425	1007	6	595	446	2435	524	138	612	**21**	538	201	2919
193	581	448	1243	586	472	1058	7	591	496	2489	521	153	631	**22**	535	224	2883
194	578	493	1296	583	519	1113	8	588	546	2546	518	168	660	**23**	532	246	2848
195	574	538	1351	579	566	1169	9	584	595	2605	515	184	690	**24**	529	268	2814
196	570	582	1405	575	614	1225	10	580	645	2663	511	199	720	**25**	525	291	2778
197	566	627	1460	571	661	1281	11	576	694	2722	507	214	750	**26**	521	313	2741
198	562	672	1514	567	708	1337	12	572	744	2780	503	229	780	**27**	517	336	2696
199	558	717	1568	563	755	1393	13	568	794	2838	499	245	811	**28**	513	358	2670
200	553	762	1624	558	802	1450	14	563	843	2898	494	260	842	**29**	508	380	2633
201	548	806	1679	553	850	1507	15	558	893	2957	490	275	872	**30**	503	403	2596
202	544	851	1734	549	897	1563	16	553	942	3017	486	291	909	**31**	499	425	2560
203	539	896	1789	544	944	1620	17	549	992	3075	481	306	934	**1**	494	448	2523
204	533	941	1845	538	991	1678	18	543	1042	3135	476	321	965	**2**	489	455	2486
205	528	986	1901	533	1038	1735	19	538	1091	3195	471	337	997	**3**	484	492	2449
206	523	1030	1956	528	1086	1792	20	533	1141	3254	466	352	1028	**4**	479	515	2412
207	519	1075	2011	524	1133	1848	21	529	1191	3313	462	367	1057	**5**	475	537	2376
208	513	1120	2067	518	1180	1906	22	523	1240	3373	457	382	1089	**6**	469	560	2338
209	507	1165	2123	512	1227	1964	23	517	1290	3433	451	398	1122	**7**	463	582	2300
210	501	1210	2180	506	1274	2022	24	511	1339	3494	446	413	1153	**8**	458	604	2263
211	495	1254	2236	500	1322	2080	25	505	1389	3554	440	428	1185	**9**	452	627	2225
212	488	1299	2294	493	1369	2139	26	498	1438	3616	434	444	1216	**10**	450	649	2191
213	484	1344	2348	487	1416	2197	27	490	1488	3678	443	460	1235	**11**	448	672	2157
214	477	1394	2405	480	1468	2256	28	483	1542	3739	437	486	1267	**12**	445	704	2122
215	470	1445	2463	473	1520	2315	29	476	1597	3801	430	513	1301	**13**	440	735	2186
216	463	1495	2520	466	1572	2374	30	469	1651	3862	423	539	1334	**14**	433	767	2046
217	456	1546	2578	459	1624	2433	1	462	1706	3924	416	565	1367	**15**	426	800	2007
218	449	1596	2635	452	1676	2492	2	455	1760	3975	409	591	1400	**16**	419	831	1969
219	441	1646	2693	444	1728	2552	3	447	1814	4047	402	618	1434	**17**	412	863	1930
220	434	1697	2751	437	1780	2611	4	440	1869	4109	395	644	1467	**18**	405	895	1891
221	426	1747	2809	429	1832	2671	5	432	1923	4171	388	670	1500	**19**	397	927	1850
222	418	1798	2868	421	1884	2731	6	424	1978	4234	381	697	1534	**20**	389	959	1811
223	410	1848	2926	413	1936	2791	7	416	2032	4296	374	723	1566	**21**	382	991	1778
224	402	1898	2972	405	1988	2838	8	408	2086	4343	366	749	1602	**22**	374	1023	1734
225	394	1949	3018	397	2040	2884	9	400	2141	4391	358	776	1638	**23**	366	1055	1695
226	386	1999	3064	389	2092	2931	10	392	2195	4438	350	802	1674	**24**	358	1087	1657
227	377	2050	3111	380	2144	2979	11	383	2250	4487	342	828	1710	**25**	350	1119	1629
228	369	2100	3157	372	2196	3025	12	375	2304	4534	334	854	1746	**26**	341	1151	1599
229	360	2150	3204	363	2248	3073	13	366	2358	4583	326	881	1782	**27**	333	1183	1560
230	351	2201	3250	354	2300	3121	14	357	2413	4631	317	907	1819	**28**	324	1215	1521
231	342	2251	3297	345	2352	3169	15	348	2467	4680	309	933	1855	**29**	316	1247	1483
232	333	2302	3344	336	2404	3216	16	339	2522	4728	301	960	1891	**30**	307	1279	1444
233	324	2352	3391	327	2456	3264	17	330	2576	4777	293	986	1927	**1**	299	1311	1405
234	314	2402	3439	317	2508	3313	18	320	2630	4826	284	1012	1964	**2**	290	1343	1366
235	305	2453	3486	308	2560	3360	19	311	2685	4875	275	1039	2001	**3**	281	1374	1327
236	296	2503	3533	299	2612	3408	20	302	2739	4923	266	1065	2038	**4**	272	1407	1288
237	287	2554	3580	290	2664	3456	21	293	2794	4972	257	1091	2075	**5**	263	1439	1249
238	277	2604	3628	280	2716	3505	22	283	2848	5021	248	1117	2112	**6**	254	1470	1209
239	267	2654	3676	270	2768	3553	23	273	2902	5071	239	1144	2149	**7**	245	1502	1170
240	258	2705	3723	261	2820	3601	24	264	2957	5119	230	1170	2186	**8**	236	1534	1131
241	246	2755	3773	248	2872	3653	25	251	3011	5172	220	1196	2224	**9**	226	1567	1091
242	236	2806	3821	238	2924	3701	26	241	3066	5221	211	1223	2261	**10**	216	1598	1051
243	211	2856	3884	212	2976	3766	27	213	3120	5287	203	1248	2297	**11**	205	1630	1009
244	202	2894	3931	20[illegible]	3015	3814	28	204	3159	5337	194	1276	2334	**12**	196	1660	970
245	192	2932	3979	193	3053	3863	29	194	3199	5387	184	1304	2372	**13**	186	1691	930
246	182	2970	4026	18[illegible]	3092	3911	30	184	3238	5436	174	1332	2410	**14**	176	1721	890

Solar month days 1–30 (rows 187–216): *Tamil*, Aippasi; *Malayalam*, Tulam; *Bengal*, Kartika.

Solar month days 1–30 (rows 217–246): *Tamil*, Kartigai; *Malayalam*, Vrischikam; *Bengal*, Margasira.

English dates: October (16–31), November (1–30), December (1–14).

TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33° —480″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Jehlum. A.D. 1840—1920	Lat. 34° —228″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Srinagar. A.D. 1840—1920	Days of solar months.	Lat. 35° —1592″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Kabul. A.D. 1840—1920	Lat. 19° —692″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Bombay. A.D. 1840—1920	Eng. date.	Lat. 22·5° +3020″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Calcutta. A.D. 1840—1920
247	+172	—3008	—4074	+173	—3131	—3960	1 (*Tamil*, Margali; *Malayalam*, Dhanus; *Bengal*, Pausha.)	+174	—3278	—5486	+164	—1360	—2448	**15** (December)	+166	—1741	+850
248	162	3046	4122	163	3169	4009	2	164	3317	5535	154	1388	2486	**16**	156	1762	809
249	152	3084	4170	153	3208	4057	3	154	3357	5585	144	1416	2524	**17**	146	1793	769
250	142	3121	4218	143	3247	4106	4	144	3396	5634	134	1444	2562	**18**	135	1823	728
251	132	3159	4266	133	3286	4155	5	134	3436	5683	124	1472	2600	**19**	125	1853	688
252	122	3197	4314	123	3324	4204	6	124	3475	5733	114	1500	2638	**20**	115	1883	648
253	112	3235	4362	113	3363	4252	7	114	3515	5782	104	1528	2676	**21**	105	1914	607
254	102	3273	4410	103	3402	4301	8	104	3554	5832	94	1556	2714	**22**	95	1944	567
255	92	3311	4417	93	3440	4307	9	94	3594	5837	84	1584	2731	**23**	85	1974	553
256	82	3349	4424	83	3479	4313	10	84	3633	5842	74	1612	2754	**24**	75	2004	538
257	72	3387	4430	73	3518	4319	11	74	3673	5848	64	1640	2765	**25**	65	2034	525
258	62	3425	4437	63	3557	4325	12	64	3712	5853	54	1668	2782	**26**	55	2065	508
259	51	3463	4445	52	3595	4332	13	53	3752	5859	44	1696	2799	**27**	44	2095	492
260	41	3501	4452	42	3634	4338	14	43	3791	5864	34	1724	2817	**28**	34	2125	478
261	31	3539	4459	32	3673	4344	15	33	3831	5869	24	1752	2834	**29**	24	2155	463
262	21	3577	4465	22	3711	4350	16	23	3870	5875	14	1780	2851	**30**	14	2185	448
263	11	3615	4472	12	3750	4356	17	13	3910	5880	2	1808	2868	**31**	2	2216	431
264	— 19	3653	4499	— 20	3789	4384	18	— 21	3949	5909	— 10	1836	2891	**1** (January)	— 11	2246	414
265	29	3691	4506	30	3828	4390	19	31	3989	5914	20	1864	2908	**2**	21	2276	399
266	39	3728	4513	40	3866	4396	20	41	4028	5919	32	1892	2925	**3**	32	2306	383
267	49	3766	4519	50	3905	4402	21	51	4068	5925	41	1920	2941	**4**	42	2336	368
268	59	3804	4526	60	3944	4408	22	61	4107	5930	51	1948	2958	**5**	52	2367	353
269	70	3842	4534	71	3982	4415	23	72	4147	5936	61	1976	2975	**6**	63	2397	337
270	80	3880	4541	81	4021	4421	24	82	4186	5941	70	2004	2992	**7**	73	2427	323
271	91	3918	4549	92	4060	4428	25	93	4225	5947	81	2032	3010	**8**	84	2457	307
272	92	3956	4546	93	4099	4425	26	94	4265	5944	91	2060	3027	**9**	94	2487	292
273	93	3994	4544	94	4137	4422	27	95	4304	5940	101	2088	3044	**10**	100	2518	281
274	98	4032	4546	97	4176	4421	28	97	4344	5937	102	2116	3052	**11**	102	2548	274
275	103	4029	4548	102	4172	4422	29	102	4339	5937	109	2123	3066	**12**	107	2552	265
276	109	4026	4551	108	4168	4424	1 (*Tamil*, Tai; *Malayalam*, Magaram; *Bengal*, Magha.)	107	4334	5937	115	2130	3079	**13**	114	2557	253
277	115	4022	4553	114	4164	4426	2	113	4330	5939	122	2137	3093	**14**	120	2561	243
278	120	4019	4555	119	4160	4427	3	119	4325	5940	129	2144	3107	**15**	127	2567	231
279	126	4016	4558	125	4156	4429	4	124	4320	5940	135	2151	3120	**16**	133	2572	221
280	132	4013	4561	131	4152	4431	5	130	4315	5941	142	2159	3135	**17**	140	2576	210
281	137	4010	4563	136	4148	4432	6	136	4310	5942	149	2166	3149	**18**	146	2581	199
282	143	4006	4565	142	4144	4434	7	141	4306	5943	155	2173	3172	**19**	152	2586	188
283	149	4003	4568	148	4140	4436	8	146	4301	5943	162	2180	3176	**20**	159	2591	176
284	154	4000	4570	153	4136	4437	9	152	4296	5944	169	2187	3189	**21**	165	2595	166
285	160	3997	4526	159	4132	4391	10	158	4291	5896	175	2194	3168	**22**	171	2600	190
286	166	3994	4481	165	4128	4345	11	163	4286	5847	182	2201	3149	**23**	178	2605	212
287	171	3990	4436	170	4124	4298	12	168	4282	5797	189	2208	3129	**24**	184	2610	240
288	177	3987	4392	176	4120	4252	13	174	4277	5749	195	2215	3108	**25**	190	2615	266
289	183	3984	4347	182	4116	4201	14	180	4272	5701	202	2222	3088	**26**	197	2620	291
290	188	3981	4302	187	4112	4160	15	185	4267	5652	209	2230	3069	**27**	204	2624	316
291	194	3978	4258	193	4108	4114	16	191	4262	5604	215	2237	3048	**28**	210	2629	352
292	200	3974	4213	199	4104	4068	17	197	4258	5555	222	2244	3028	**29**	216	2634	368
293	205	3971	4168	204	4100	4021	18	202	4253	5506	229	2251	3009	**30**	222	2639	394
294	211	3968	4124	210	4096	3975	19	207	4248	5457	235	2258	2988	**31**	229	2644	419
295	216	3965	4078	216	4092	3929	20	213	4242	5409	242	2265	2968	**1** (February)	236	2648	444
296	222	3962	4034	221	4088	3882	21	219	4238	5361	249	2272	2949	**2**	242	2653	470
297	228	3958	3990	227	4084	3837	22	224	4234	5311	255	2279	2928	**3**	248	2657	496
298	233	3955	3944	233	4080	3791	23	229	4229	5262	262	2286	2908	**4**	255	2662	521
299	239	3952	3900	238	4076	3744	24	235	4224	5214	269	2295	2888	**5**	261	2666	547
300	245	3949	3856	244	4072	3698	25	241	4219	5166	275	2301	2868	**6**	268	2670	572
301	250	3946	3810	249	4068	3651	26	246	4214	5111	282	2308	2848	**7**	274	2675	598
302	256	3942	3766	254	4064	3604	27	251	4210	5067	289	2315	2828	**8**	280	2680	624
303	262	3939	3722	259	4060	3557	28	256	4205	5018	295	2322	2808	**9**	286	2685	650
304	267	3936	3676	264	4056	3511	29	261	4200	4969	302	2328	2788	**10**	293	2689	675
305	269	3886	3628	266	4004	3461	30	263	4146	4917	305	2301	2764	**11**	296	2659	701

TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33°—480″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Jehlum. A.D. 1840—1920	Lat. 34°—228″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Srinagar. A.D. 1840—1920	Days of solar months.	Lat. 35°—1592″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Kabul. A.D. 1840—1920	Lat. 19°—692″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Bombay. A.D. 1840—1920	Eng. date.	Lat. 22·5°+3020″ Long. Eqn. of time in seconds.	⊙'s Trop. Long. in seconds.	Total Corrn. in seconds. Calcutta. A.D. 1840—1920
306	—271	—3835	—3580	—268	—3952	—3411	1 (*Bengal*, Phalguna; *Malayalam*, Kumbam; *Tamil*, Masi)	—265	—4092	—4865	—308	—2275	—2741	**12** (February)	—299	—2628	+733
307	273	3785	3532	270	3900	3361	2	267	4037	4812	311	2263	2717	**13**	302	2596	762
308	275	3735	3483	272	3848	3311	3	269	3983	4760	314	2221	2693	**14**	305	2564	791
309	277	3684	3435	274	3797	3261	4	271	3929	4708	317	2194	2669	**15**	308	2532	820
310	280	3634	3388	277	3745	3212	5	273	3875	4656	320	2168	2646	**16**	310	2500	850
311	282	3584	3339	279	3693	3162	6	275	3821	4604	323	2141	2622	**17**	313	2468	879
312	284	3533	3291	281	3641	3113	7	277	3766	4552	326	2114	2598	**18**	316	2436	908
313	286	3483	3243	283	3589	3063	8	279	3712	4499	329	2088	2575	**19**	319	2404	937
314	288	3433	3194	285	3537	3013	9	281	3658	4447	332	2061	2551	**20**	322	2372	966
315	290	3382	3146	287	3485	2963	10	283	3604	4395	335	2034	2527	**21**	325	2340	995
316	293	3332	3070	289	3433	2883	11	285	3550	4313	338	2008	2482	**22**	328	2308	1049
317	295	3282	2993	291	3382	2804	12	287	3495	4231	341	1981	2439	**23**	331	2276	1102
318	297	3231	2915	293	3330	2724	13	289	3441	4149	344	1954	2396	**24**	334	2244	1156
319	299	3181	2838	295	3278	2645	14	291	3387	4067	347	1927	2351	**25**	337	2212	1210
320	301	3131	2761	297	3226	2585	15	293	3333	3985	350	1901	2308	**26**	340	2180	1264
321	303	3080	2684	299	3174	2485	16	295	3279	3903	353	1874	2263	**27**	342	2148	1318
322	306	3030	2608	301	3122	2406	17	297	3224	3821	356	1847	2218	**28**	345	2116	1372
323	308	2980	2530	303	3070	2326	18	299	3170	3739	359	1821	2173	**1**	348	2084	1426
324	310	2929	2453	305	3019	2247	19	301	3116	3657	362	1794	2104	**2**	351	2052	1479
325	312	2879	2376	307	2967	2167	20	303	3062	3575	365	1767	2057	**3**	353	2020	1534
326	314	2829	2299	309	2915	2087	21	305	3008	3493	368	1741	2010	**4**	356	1988	1588
327	316	2779	2222	311	2863	2008	22	307	2953	3411	371	1714	1963	**5**	359	1956	1641
328	318	2728	2144	313	2811	1928	23	309	2899	3329	374	1687	1916	**6**	361	1924	1696
329	320	2678	2067	315	2759	1849	24	311	2845	3247	377	1660	1869	**7**	364	1892	1749
330	322	2628	1990	317	2707	1769	25	313	2791	3165	380	1634	1822	**8**	366	1860	1804
331	324	2577	1913	319	2655	1689	26	315	2737	3083	383	1607	1775	**9**	369	1828	1858
332	326	2527	1836	321	2604	1610	27	317	2683	3001	385	1580	1727	**10**	371	1796	1912
333	328	2477	1758	323	2552	1530	28	319	2628	2919	387	1554	1679	**11**	373	1764	2068
334	330	2426	1681	325	2500	1451	29	321	2574	2837	389	1527	1631	**12**	375	1732	2021
335	332	2376	1604	327	2448	1371	1 (*Bengal*, Chaitra; *Malayalam*, Meenam; *Tamil*, Panguni)	323	2520	2755	391	1500	1583	**13** (March)	377	1700	2076
336	332	2297	1525	327	2366	1289	2	323	2436	2671	391	1450	1534	**14**	377	1643	2133
337	332	2218	1446	327	2285	1208	3	323	2352	2587	392	1400	1484	**15**	378	1587	2188
338	333	2138	1367	328	2203	1127	4	324	2268	2504	392	1350	1434	**16**	378	1530	2300
339	333	2059	1288	328	2122	1046	5	324	2184	2420	393	1300	1385	**17**	380	1473	2357
340	333	1980	1209	328	2040	964	6	324	2100	2336	393	1250	1335	**18**	380	1416	2412
341	334	1901	1131	329	1958	883	7	325	2016	2253	394	1200	1286	**19**	381	1360	2468
342	334	1822	1052	329	1877	802	8	325	1932	2169	394	1150	1236	**20**	381	1303	2524
343	334	1742	972	329	1795	720	9	325	1848	2085	395	1100	1187	**21**	382	1246	2581
344	335	1663	891	330	1714	640	10	326	1764	2002	395	1050	1137	**22**	382	1190	2638
345	335	1584	815	330	1632	558	11	326	1680	1918	396	1000	1088	**23**	383	1133	2637
346	335	1505	736	330	1550	476	12	326	1596	1834	396	950	1038	**24**	383	1076	2694
347	336	1426	658	331	1469	396	13	327	1512	1751	397	900	989	**25**	384	1020	2749
348	336	1346	578	331	1387	314	14	327	1423	1667	397	850	939	**26**	384	963	2806
349	336	1267	499	331	1306	233	15	327	1344	1583	398	800	890	**27**	385	907	2862
350	337	1188	421	332	1224	152	16	328	1260	1500	398	750	840	**28**	385	850	2918
351	337	1109	342	332	1142	70	17	328	1176	1416	399	700	791	**29**	386	793	2974
352	337	1030	263	332	1061	11	18	328	1092	1332	399	650	741	**30**	386	737	3030
353	338	950	184	333	979	+ 92	19	329	1008	1249	400	600	692	**31**	387	679	3086
354	338	871	105	333	898	173	20	329	924	1165	400	550	642	**1** (April)	387	624	3143
355	338	792	26	333	816	255	21	329	840	1081	401	500	593	**2**	388	567	3199
356	339	713	+ 52	334	734	336	22	330	756	998	401	450	543	**3**	388	510	3255
357	339	634	131	334	653	417	23	330	672	914	402	400	494	**4**	389	454	3310
358	339	554	201	334	571	499	24	330	588	830	402	350	444	**5**	389	397	3367
359	340	475	289	335	490	579	25	331	504	747	403	300	395	**6**	390	340	3422
360	340	396	368	335	408	661	26	331	420	663	403	250	345	**7**	390	283	3480
361	340	317	447	335	326	743	27	331	336	579	404	200	296	**8**	391	227	3535
362	341	238	525	336	245	823	28	332	252	496	404	150	246	**9**	391	171	3591
363	341	158	605	336	163	905	29	332	168	412	405	100	197	**10**	392	114	3647
364	341	79	684	336	82	986	30	332	84	328	405	50	147	**11**	392	57	3700
365	342	0	762	337	0	1067	31	333	0	245	405	0	97	**12**	392	0	3761

TABLE XIII—A.

Latitudes and Longitudes of Chief places in British India and the Feudatory States.

(Longitudes are expressed by the difference in Seconds of time as compared with Ujjain.)

Serial No.	District.	Town.	Latitude in degrees & decimals of a degree.	Time difference in Seconds.
	BRITISH TERRITORY.			
	Aden Province.			
1	Aden ...	Aden	12·7	—7348
	Ajmere—Merwara Province.			
2	Ajmere ...	Ajmere	26·5	— 280
		Nazirabad	26·3	— 256
3	Merwara ...	Beawar (Nayanagar)	26·0	— 352
	Baluchistan Province.			
4	Quetta—Peshin	Quetta	30·2	—2104
	Bengal Province.			
5	Balasore ...	Balasore	21·5	+2676
6	Bankura ...	Bankura	23·2	+2708
7	Bhagalpur ...	Bhagalpur	25·2	+2692
8	Burdwan ...	Burdwan	23·2	+2896
		Howrah	22·5	+3016
9	Champaram ...	Bettiah	26·5	+2092
10	Cuttack ...	Cuttack	20·5	+2420
11	Darbhanga ...	Darbhanga	26·2	+2428
12	Gaya ...	Gaya	24·5	+2216
13	Hooghly ...	Hoogly and Chinsura	23·0	+3028
		Serampore	22·7	+3016
14	Midnapore ...	Midnapore	22·5	+2768
15	Monghyr ...	Monghyr	25·3	+2564
16	Murshidabad .	Berhampore	24·0	+2996
17	Muzaffarpur ...	Hajipur	25·7	+2260
		Muzaffarpur	26·0	+2308
18	Nadia ...	Krishnagar	23·5	+3056
		Santipur	23·2	+3040
19	Twenty-four Parganas ...	Calcutta, Cossipur-Chitpur, Garden Reach, Maniktala	22·5	+3020
		Naihati	23·0	+3032
		Baranagar	22·7	+3020
		Bhatpara	23·0	+3032
20	Patna ...	Patna	25·7	+2252
		Bihar	25·2	+2336
		Dinapore	25·7	+2224
21	Puri ...	Puri	19·8	+2408
22	Ranchi ...	Ranchi	23·3	+2292
23	Saran ...	Chapra	25·8	+2148
24	Shahabad ...	Sasaram	25·0	+1976
		Arrah	25·5	+2132
	Berar Province			
25	Akola ...	Akola	20·7	+ 300
26	Amraoti ...	Amraoti	21·0	+ 480
27	Ellichpur ...	Ellichpur	21·2	+ 424
	Bombay Province.			
28	Ahmadabad ...	Ahmadabad	23·0	— 768
29	Ahmadnagar ...	Ahmadnagar	19·0	— 208
30	Belgaum ...	Belgaum	16·0	— 304
31	Bijapur ...	Bijapur	16·8	— 16
32	Bombay ...	Bombay	19·0	— 692
33	Broach ...	Broach	21·7	— 672
34	Dharwar ...	Hubli	15·3	— 152
		Dharwar	15·5	— 184
		Gadag	15·5	— 36
35	Kaira ...	Nadiad	22·7	— 700
36	Khandesh ...	Dhulia	21·0	— 240
	Bombay Province—*(continued).*			
37	Nasik ...	Nasik	20·0	— 480
38	Panch Mahal ...	Godhra	22·7	— 520
39	Poona ...	Poona	18·5	— 464
40	Sholapur ...	Sholapur	17·7	+ 28
		Pandharpur	17·7	— 84
		Barsi	18·2	— 24
41	Satara ...	Satara	17·7	— 428
42	Surat ...	Surat	12·2	— 708
43	Thana ...	Bandra	19·0	— 708
	Burma Province.			
44	Akyab ...	Akyab	20·2	+4112
45	Amherst ...	Moulmein	16·5	+5244
46	Bassein ...	Bassein	16·7	+4556
47	Henzada ...	Henzada	17·7	+4732
48	Mandalay ...	Mandalay	22·0	+4876
49	Prome ...	Prome	18·8	+4664
50	Rangoon ...	Rangoon	16·7	+4896
51	Tavoy ...	Tavoy	14·1	+5380
	Central Provinces.			
52	Jubbalpore ...	Jubbalpore	23·2	+1000
53	Nagpur ...	Kamptee	21·2	+ 820
		Nagpur	21·2	+ 800
54	Nimar ...	Burhanpur	21·3	+ 108
55	Raipur ...	Raipur	21·2	+1408
56	Saugor ...	Saugor	23·8	+ 712
	Eastern Bengal & Assam Province.			
57	Chittagong ...	Chittagong	23·3	+3852
58	Decca ...	Decca, Narayanganj	23·7	+3508
59	Manipur ...	Imphal	24·8	+4360
60	Pabna ...	Sirajganj	24·5	+3352
61	Rajshahi ...	Rampur-Bolia	24·3	+3076
	Madras Province.			
62	Bellary ...	Adoni	15·7	+ 360
		Bellary	15·2	+ 256
63	Chingleput ...	Conjeeveram	12·8	+ 940
64	Coimbatore ...	Coimbatore	11·0	+ 284
65	Ganjam ...	Berhampore	19·3	+2164
66	Godaveri ...	Cocanada	17·0	+1548
		Rajahmundry	17·0	+1436
67	Kistna ...	Bezwada	16·5	+1160
		Ellore	16·7	+1280
		Masulipatam	16·2	+1284
68	Guntur ...	Guntur	16·3	+1124
69	Kurnool ...	Kurnool	15·8	+ 548
70	Madras ...	Madras	13·0	+1072
71	Madura ...	Madura	10·0	+ 560
		Bodinayakkanur	10·0	+ 376
		Dindigul	10·3	+ 528
72	Malabar ...	Calicut	11·2	+ 0
		Cannanore	11·8	— 100
		Palghat	10·8	+ 208
		Tellicherry	11·7	— 72
73	Nellore ...	Nellore	14·5	+1008
74	North Arcot ...	Gudiyattam	13·0	+ 744
		Vellore	12·9	+ 808
75	Salem ...	Salem	11·7	+ 572
76	South Arcot ...	Cuddalore	11·7	+ 956
77	South Canara .	Mangalore	12·8	— 224
78	Tanjore ...	Kumbakonam	11·0	+ 860
		Negapatam	10·7	+ 976

TABLE XIII—A.

Latitudes and Longitudes of Chief places in British India and the Feudatory States.

(Longitudes are expressed by the difference in Seconds of time as compared with Ujjain.)

Serial No.	District.	Town.	Latitude in degrees & decimals of a degree.	Time difference in Seconds.
	Madras Province—(*continued*).			
78	Tanjore—*contd* ...	Tanjore.	10·7	+ 804
		Mannargudi	10·7	+ 880
		Mayavaram	11·1	+ 928
79	Tinnevelly ...	Palamcottah	8·7	+ 472
		Rajapalaiyam	9·5	+ 424
		Srivilliputtur	9·5	+ 440
		Tinnevelly	8·7	+ 456
		Tiruchendur	8·5	+ 560
		Tuticorin	8·8	+ 568
80	Trichinopoly ...	Trichinopoly, Srirangam	10·8	+ 700
81	Vizagapatam.	Vizagapatam	17·7	+1804
		Vizianagaram	18·2	+1832
	North West Frontier Province.			
82	Dera Ismail Khan	Dera Ismail Khan	31·8	—1168
83	Kohat ...	Kohat	33·6	—1044
84	Peshawar ...	Peshawar	34·0	—1008
	Punjab Province.			
85	Amritsar ...	Amritsar	31·7	— 216
86	Delhi ...	Delhi	28·7	+ 352
87	Dera Ghazi Khan	Dera Ghazi Khan	30·0	—1200
88	Ferozepore ...	Ferozepore	31·0	— 280
89	Gurdaspur ...	Batala	30·8	— 140
90	Gujranwala ...	Gujranwala	32·2	— 384
91	Gurgaon ...	Rewari	28·2	+ 204
92	Hissar ...	Bhiwani	28·8	+ 84
93	Jhang ...	Jhang-Maghiana	31·3	— 828
94	Karnal ...	Karnal	29·7	+ 288
		Panipat	29·4	
95	Jullundur ...	Jullundur	31·3	— 48
96	Lahore ...	Lahore	31·6	— 348
		Kasur	31·1	— 316
97	Ludhiana ...	Ludhiana	31·0	+ 20
98	Multan ...	Multan	30·2	—1024
99	Rawalpandi ...	Rawalpandi	33·6	— 640
100	Rohtak ...	Rohtak	28·9	+ 192
101	Sialkot ...	Sialkot	32·5	— 300
	Sindh Province.			
102	Hyderabad ...	Hyderabad	25·3	—1768
103	Karachi ...	Karachi	24·8	—2092
104	Sukkur ...	Shikarpur	28·0	—1708
		Sukkur	27·7	—1652
	United Provinces of Agra and Oudh.			
105	Harodi ...	Shahabad	27·7	+1000
106	Sitapur ...	Sitapur	27·6	+1172
	NATIVE STATES.			
	Baroda State.			
107	Baroda ...	Baroda	22·3	— 608
108	Kadi ...	Patan (Anhilwad)	23·8	— 868
109	Navasan ...	Navasan	21·0	— 684
	Bombay Native States.			
110	Cambay ...	Cambay	22·3	— 748
111	Cutch ...	Bhuj	23·2	—1436
112	Kathiawar ...	Bhaunagar	21·7	— 860
		Dhoraji	21·7	—1240
	Bombay Native States—(*continued*).			
112	Kathiawar—*contd.*	Junagarah	21·5	—1244
		Navanagar	22·4	—1324
		Porabandar	21·6	—1436
		Rajkot	22·3	—1188
		Wadhwan	22·6	— 972
113	Kolhapur ...	Kolhapur	16·6	— 364
	Central India Agency.			
114	Rewah ...	Rewah	24·5	+1324
115	Bhopal ...	Bhopal	23·2	+ 392
116	Datia ...	Datia	25·6	+ 644
117	Gwalior ...	Lashkar	26·2	+ 572
		Ujjain	23·1	+ 0
118	Indore ...	Indore	22·7	+ 28
119	Iaora ...	Iaora	23·6	— 156
120	Mandasar in Gwalior	Mandasar	24·1	— 168
121	Ratlam ...	Ratlam	23·3	— 176
	Hyderabad State.			
122	Aurangabad ...	Aurangabad, Jalna	19·8	— 108
123	Gulbarga ...	Gulbarga	17·3	+ 256
124	Hyderabad ...	Hyderabad	17·3	+ 640
125	Raichur ...	Raichur	16·2	+ 376
	Kashmir State.			
126	Jammu ...	Jammu	32·7	— 208
127	Kashmir ...	Srinagar	34·8	— 228
	Madras Native States.			
128	Cochin ...	Ernakulam	10·0	+ 120
		Mattancheri	10·0	+ 112
129	Pudukkottai ...	Pudukkottai	10·3	+ 728
130	Travancore ...	Alleppey	9·5	+ 132
		Nagercoil	8·1	+ 400
		Trivandrum	8·5	+ 280
	Mysore State.			
131	Bangalore ...	Bangalore	13·0	+ 432
132	Kolar ...	Kolar	13·1	+ 564
133	Mysore ...	Mysore	12·3	+ 212
	Punjab Native States.			
134	Malar Kotla ...	Malar Kotla	30·5	+ 48
135	Patiala ...	Patiala	30·3	+ 164
	Rajputana Agency.			
136	Alwar ...	Alwar	27·6	+ 196
137	Bharatpur ...	Bharatpur	27·2	+ 412
138	Bikaner ...	Bikaner	28·0	— 596
139	Jaipur ...	Sikar	27·6	— 156
		Jaipur	26·9	+ 12
140	Karauli ...	Karauli	26·5	+ 300
141	Kotah ...	Kotah	25·1	+ 16
142	Jodhpur ...	Jodhpur	26·3	— 664
143	Mewar or Udaipur ...	Udaipur	24·6	— 500
144	Tonk ...	Tonk	26·1	+ 4
	United Provinces Native States.			
145	Rampur ..	Rampur	28·8	+ 780

TABLE XIV.

Jupiter's Cycle of 60 years—Northern System, showing suppressed years. A.D. 280 to A.D. 2000.

0	Vijaya ...	2 80	3 39	3 98	4 58	5 17	5 76	6 36	0	6 95	7 54	8 14	8 73	9 32	9 92	10 51	11 10
1	Jaya ...	81	40	99	59	18	77	37	1	96	55	15	74	33	93	52	11
2	Manmatha ...	82	41	4 00	60	19	78	38	2	97	56	16	75	34	94	53	12
3	Durmukha ...	83	42	01	61	20	79	39	3	98	57	17	76	35	...	54	13
4	Hemalamba ...	84	43	02	62	21	80	40	4	99	58	18	77	36	95	55	14
5	Vilamba ...	85	44	03	63	22	81	41	5	7 00	59	19	78	37	96	56	15
6	Vikarin ...	86	45	04	64	23	82	42	6	01	60	20	79	38	97	57	16
7	Sarvari ...	87	46	05	65	24	83	43	7	02	61	21	80	39	98	58	17
8	Plava ...	88	47	06	66	25	84	44	8	03	62	22	81	40	99	59	18
9	Subhakrit ...	89	48	07	67	26	85	45	9	04	63	23	82	41	10 00	60	19
10	Sobhana ...	90	49	08	68	27	86	46	10	05	64	...	83	42	01	61	20
11	Krodhin ...	91	50	09	69	28	87	47	11	06	65	24	84	43	02	62	21
12	Visvavasu ...	92	51	10	70	29	88	48	12	07	66	25	85	44	03	63	22
13	Parabhava ...	93	52	11	71	30	89	49	13	08	67	26	86	45	04	64	23
14	Plavanga ...	94	53	12	72	31	90	50	14	09	68	27	87	46	05	65	24
15	Kilaka ...	95	54	13	73	32	91	51	15	10	69	28	88	47	06	66	25
16	Saumya ...	96	55	14	74	33	92	52	16	11	70	29	89	48	07	67	26
17	Sadharana ...	97	56	15	75	34	93	53	17	12	71	30	90	49	08	68	27
18	Virodhakrit ...	98	57	16	76	35	94	...	18	13	72	31	91	50	09	69	28
19	Paridhavin ...	99	58	17	77	36	95	54	19	14	73	32	92	51	10	70	29
20	Pramadin ...	3 00	59	18	78	37	96	55	20	15	74	33	93	52	11	71	30
21	Ananda ...	01	60	19	79	38	97	56	21	16	75	34	94	53	12	72	31
22	Rakshasa ...	02	61	20	80	39	98	57	22	17	76	35	95	54	13	73	32
23	Anala ...	03	62	21	81	40	99	58	23	18	77	36	96	55	14	74	33
24	Pingala ...	04	63	22	82	41	6 00	59	24	19	78	37	97	56	15	75	34
25	Kalayukta ...	05	64	23	...	42	01	60	25	20	79	38	98	57	16	76	35
26	Siddharthin ...	06	65	24	83	43	02	61	26	21	80	39	99	58	17	77	36
27	Raudra ...	07	66	25	84	44	03	62	27	22	81	40	9 00	59	18	78	37
28	Durmati ...	08	67	26	85	45	04	63	28	23	82	41	01	60	19	79	38
29	Dundubhi ...	09	68	27	86	46	05	64	29	24	83	42	02	61	20	...	39
30	Rudhirodgarin .	10	69	28	87	47	06	65	30	25	84	43	03	62	21	80	40
31	Raktaksha ...	11	70	29	88	48	07	66	31	26	85	44	04	63	22	81	41
32	Krodhana ...	...	71	30	89	49	08	67	32	27	86	45	05	64	23	82	42
33	Kshaya ...	12	72	31	90	50	09	68	33	28	87	46	06	65	24	83	43
34	Prabhava ...	13	73	32	91	51	10	69	34	29	88	47	07	66	25	84	44
35	Vibhava ...	14	74	33	92	52	11	70	35	30	89	48	08	67	26	85	45
36	Sukla ...	15	75	34	93	53	12	71	36	31	90	49	...	68	27	86	46
37	Pramoda ...	16	76	35	94	54	13	72	37	32	91	50	09	69	28	87	47
38	Prajapati ...	17	77	36	95	55	14	73	38	33	92	51	10	70	29	88	48
39	Angiras ...	18	78	37	96	56	15	74	39	34	93	52	11	71	30	89	49
40	Srimukha ...	19	79	38	97	57	16	75	40	35	94	53	12	72	31	90	50
41	Bhava ...	20	80	39	98	58	17	76	41	36	95	54	13	73	32	91	51
42	Yuvan ...	21	81	40	99	59	18	77	42	37	96	55	14	74	33	92	52
43	Dhatri ...	22	82	41	5 00	60	19	78	43	38	97	56	15	75	34	93	53
44	Isvara ...	23	83	42	01	61	20	79	44	...	98	57	16	76	35	94	54
45	Bahudhanya ...	24	84	43	02	62	21	80	45	39	99	58	17	77	36	95	55
46	Pramathin ...	25	85	44	03	63	22	81	46	40	8 00	59	18	78	37	96	56
47	Vikrama ...	26	86	45	04	64	23	82	47	41	01	60	19	79	38	97	57
48	Vrisha ...	27	87	46	05	65	24	83	48	42	02	61	20	80	39	98	58
49	Chitrabhanu ...	28	88	47	06	66	25	84	49	43	03	62	21	81	40	99	59
50	Subhanu ...	29	89	48	07	67	26	85	50	44	04	63	22	82	41	11 00	60
51	Tarana ...	30	90	49	08	...	27	86	51	45	05	64	23	83	42	01	61
52	Parthiva ...	31	91	50	09	68	28	87	52	46	06	65	24	84	43	02	62
53	Vyaya ...	32	92	51	10	69	29	88	53	47	07	66	25	85	44	03	63
54	Sarvajit ...	33	93	52	11	70	30	89	54	48	08	67	26	86	45	04	64
55	Sarvadharin ...	34	94	53	12	71	31	90	55	49	09	68	27	87	46	05	...
56	Virodhin ...	35	95	54	13	72	32	91	56	50	10	69	28	88	47	06	65
57	Vikrita ...	36	96	55	14	73	33	92	57	51	11	70	29	89	48	07	66
58	Khara ...	37	97	56	15	74	34	93	58	52	12	71	30	90	49	08	67
59	Nandana ...	38	...	57	16	75	35	94	59	53	13	72	31	91	50	09	68

TABLE XIV.

Jupiter's Cycle of 60 years—Northern System, showing suppressed years. A.D. 280 to A.D. 2000.

0	Vijaya ...	11 69	12 29	12 88	13 47	14 07	14 66	15 25	0	15 85	16 44	17 03	17 63	18 22	18 81	19 41
1	Jaya ...	70	30	89	48	08	67	26	1	86	45	04	64	23	82	...
2	Manmatha ...	71	31	90	49	09	68	27	2	87	46	05	65	24	83	42
3	Durmukha ...	72	32	91	50	10	69	28	3	88	47	06	66	25	84	43
4	Hemalamba ...	73	33	92	51	11	70	29	4	89	48	07	67	26	85	44
5	Vilamba ...	74	34	93	52	12	71	30	5	90	49	08	68	27	86	45
6	Vikarin ...	75	35	94	53	13	72	31	6	91	50	09	69	28	87	46
7	Sarvari ...	76	36	95	54	14	73	32	7	92	51	10	70	29	88	47
8	Plava ...	77	37	96	55	15	74	33	8	93	52	11	71	30	89	48
9	Subhakrit ...	78	38	97	56	16	75	34	9	94	53	12	...	31	90	49
10	Sobhana ...	79	39	98	57	17	76	35	10	95	54	13	72	32	91	50
11	Krodhin ...	80	40	99	58	18	77	36	11	96	55	14	73	33	92	51
12	Visvavasú ...	81	41	13 00	59	19	78	37	12	97	56	15	74	34	93	52
13	Parabhava ...	82	42	01	60	20	79	38	13	98	57	16	75	35	94	53
14	Plavanga ...	83	43	02	61	...	80	39	14	99	58	17	76	36	95	54
15	Kilaka ...	84	44	03	62	21	81	40	15	16 00	59	18	77	37	96	55
16	Saumya ...	85	45	04	63	22	82	41	16	...	60	19	78	38	97	56
17	Sadharana ...	86	46	05	64	23	83	42	17	01	61	20	79	39	98	57
18	Virodhakrit ...	87	47	06	65	24	84	43	18	02	62	21	80	40	99	58
19	Paridhavin ...	88	48	07	66	25	85	44	19	03	63	22	81	41	19 00	59
20	Pramadin ...	89	49	08	67	26	86	45	20	04	64	23	82	42	01	60
21	Ananda ...	90	50	09	68	27	87	46	21	05	65	24	83	43	02	61
22	Rakshasa ...	91	...	10	69	28	88	47	22	06	66	25	84	44	03	62
23	Anala ...	92	51	11	70	29	89	48	23	07	67	26	85	45	04	63
24	Pingala ...	93	52	12	71	30	90	49	24	08	68	27	86	46	05	64
25	Kalayukta ...	94	53	13	72	31	91	50	25	09	69	28	87	47	06	65
26	Siddharthin ...	95	54	14	73	32	92	51	26	10	70	29	88	48	07	66
27	Raudra ...	96	55	15	74	33	93	52	27	11	71	30	89	49	08	67
28	Durmati ...	97	56	16	75	34	94	53	28	12	72	31	90	50	09	68
29	Dundubhi ...	98	57	17	76	35	95	54	29	13	73	32	91	51	10	69
30	Rudhirodgarin .	99	58	18	77	36	96	55	30	14	74	33	92	52	11	70
31	Raktaksha ...	12 00	59	19	78	37	97	56	31	15	75	34	93	53	12	71
32	Krodhana ...	01	60	20	79	38	98	57	32	16	76	35	94	54	13	72
33	Kshaya ...	02	61	21	80	39	99	58	33	17	77	36	95	55	14	73
34	Prabhava ...	03	62	22	81	40	15 00	59	34	18	78	37	96	56	15	74
35	Vibhava ...	04	63	23	82	41	01	60	35	19	79	38	97	...	16	75
36	Sukla ...	05	64	24	83	42	02	61	36	20	80	39	98	57	17	76
37	Pramoda ...	06	65	25	84	43	03	62	37	21	81	40	99	58	18	77
38	Prajapati ...	07	66	26	85	44	04	63	38	22	82	41	18 00	59	19	78
39	Angiras ...	08	67	27	86	45	05	64	39	23	83	42	01	60	20	79
40	Srimukha ...	09	68	28	87	46	06	65	40	24	84	43	02	61	21	80
41	Bhava ...	10	69	29	88	47	07	66	41	25	85	44	03	62	22	81
42	Yuvan ...	11	70	30	89	48	08	67	42	26	...	45	04	63	23	82
43	Dhatri ...	12	71	31	90	49	09	68	43	27	86	46	05	64	24	83
44	Isvara ...	13	72	32	91	50	10	69	44	28	87	47	06	65	25	84
45	Bahudhanya ...	14	73	33	92	51	11	70	45	29	88	48	07	66	26	85
46	Pramathin ...	15	74	34	93	52	12	71	46	30	89	49	08	67	27	86
47	Vikrama ...	16	75	35	94	53	13	72	47	31	90	50	09	68	28	87
48	Vrisha ...	17	76	...	95	54	14	73	48	32	91	51	10	69	29	88
49	Chitrabhanu ...	18	77	36	96	55	...	74	49	33	92	52	11	70	30	89
50	Subhanu ...	19	78	37	97	56	15	75	50	34	93	53	12	71	31	90
51	Tarana ...	20	79	38	98	57	16	76	51	35	94	54	13	72	32	91
52	Parthiva ...	21	80	39	99	58	17	77	52	36	95	55	14	73	33	92
53	Vyaya ...	22	81	40	14 00	59	18	78	53	37	96	56	15	74	34	93
54	Sarvajit ...	23	82	41	01	60	19	79	54	38	97	57	16	75	35	94
55	Sarvadharin ...	24	83	42	02	61	20	80	55	39	98	58	17	76	36	95
56	Virodhin ...	25	84	43	03	62	21	81	56	40	99	59	18	77	37	96
57	Vikrita ...	26	85	44	04	63	22	82	57	41	17 00	60	19	78	38	97
58	Khara ...	27	86	45	05	64	23	83	58	42	01	61	20	79	39	98
59	Nandana ...	28	87	46	06	65	24	84	59	43	02	62	21	80	40	99

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 622 to A.D. 965.

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	...		6 40*	0 20	6 72	0 53	7 05	0 87	7 37	1 20	7 70	1 54
Dec	...		41	21	73	54	06	88	(5) 38	21	71	55
Dec	...		...	...	74	55	07	89	39	22	72	56
Nov	...		42	22	75	56	08	90	40	23	73	57
Nov	...		43	23	76*	57	(4) 09	91	41	24	74*	58
Nov	...		44	24	77	58	...	...	42	25	...	...
Oct	...		45	25	78	59	10	92	43	26	75	59
Oct	...		46	26	79	60	11	93	44	27	76	60
Oct	...		47*	27	(3) 80	61	12	94	45*	28	77	61
Sep	...		48	28	81	62	13	95	46	29	78	62
Sep	...		49	29	82	63	14	96	47	30	79	63
Sep	...		50	30	...	...	15	97	...	...	80	64
Aug	...		(2) 51	31	83	64	16*	98	48	31	81	65
Aug	...		52	32	84	65	17	99	49	32	82	66
Aug	...		53	33	85	66	18	1 00	50	33	83	67
July	6 22	0 1	54	34	86	67	19	01	51	34	84	68
July	23	2	55	35	87*	68	20	02	52	35	·58 85*	69
July	...	...	...	...	88	69	21	03	53	36	86	70
June	24	3	56	36	89	70	22	04	54	37	87	71
June	25	4	57	37	90	71	23	05	55	38	88	72
June	26	5	58*	38	91	72	...	...	·56 56*	39	...	...
May	27	6	59	39	92	73	24	06	57	40	89	73
May	28	7	60	40	93	74	25	07	58	41	90	74
May	...	...	61	41	94	75	26	08	59	42	91	75
Apr	29*	8	62	42	95	76	·55 27*	09	60	43	92	76
Apr	30	9	63	43	96	77	28	10	61	44	93*	77
Apr	31	10	64	44	...	...	29	11	62	45	94	78
Mar	32	11	65	45	97	78	30	12	63	46	95	79
Mar	33	12	66	46	·53 98*	79	31	13	64*	47	96	80
Mar	34	13	67	47	99	80	32	14	...	...	(7) 97	81
Feb	35	14	68	48	7 00	81	33	15	65	48	98	82
Feb	36	15	·52 69*	49	01	82	34	16	66	49	99	83
Feb	37	16	...	...	02	83	...	...	67	50	8 00	84
Jan	38	17	70	50	03	84	35*	17	(6) 68	51	01	85
Jan	39	18	71	51	04	85	36	18	69	52	02	86
Jan	·51 40	19	72	52	05*	86	37	19	70	53	...	...

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	8 02	1 87	8 35	2 21	8 68	2 55	9 00	2 88	9 33	3 22
Dec	03*	88	36	22	69	56	·63 01*	89	34	23
Dec	04	89	37	23	...	...	02	90	...	...
Nov	05	90	38	24	70	57	03	91	35	24
Nov	06	91	39	25	71	58	04	92	36	25
Nov	07	92	...	...	·61 72*	59	05	93	37	26
Oct	08	93	40	26	73	60	06	94	38*	27
Oct	09	94	41	27	74	61	07	95	39	28
Oct	10	95	42	28	75	62	...	...	40	29
Sep	11	96	·60 43*	29	76	63	08	96	41	30
Sep	12	97	44	30	77	64	09*	97	(12) 42	31
Sep	13	98	45	31	78	65	10	98	43	32
Aug	·59 14*	99	46	32	79	66	11	99	44	33
Aug	15	2 00	47	33	80*	67	12	3 00	45	34
Aug	...	...	48	34	81	68	(11) 13	01	46	35
July	16	01	49	35	82	69	14	02	47	36
July	17	02	50	36	83	70	15	03	48	37
July	18	03	51*	37	...	...	16	04	...	...
June	19	04	52	38	(10) 84	71	17	05	49*	38
June	20	05	53	39	85	72	18	06	50	39
June	21	06	54	40	86	73	19	07	51	40
May	22*	07	(9) 55	41	87	74	20*	08	52	41
May	23	08	56	42	88	75	21	09	53	42
May	24	09	...	...	89	76	22	10	54	43
Apr	25	10	57	43	90	77	23	11	55	44
Apr	(8) 26	11	58	44	91*	78	24	12	56	45
Apr	27	12	59	45	92	79	...	...	57	46
Mar	28	13	60	46	93	80	25	13	58	47
Mar	29	14	61	47	94	81	26	14	59	48
Mar	...	...	62*	48	95	82	27	15	·66 60*	49
Feb	30	15	63	49	96	83	28	16	61	50
Feb	31	16	64	50	97	84	29	17	62	51
Feb	32	17	65	51	...	...	30	18	...	...
Jan	33*	18	66	52	98	85	·64 31*	19	63	52
Jan	34	19	67	53	99	86	32	20	64	53
Jan	35	20	68	54	9 00	87	33	21	65	54

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 965 to A.D. 1323.

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.		A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	9 65	3 55	9 98	3 89	10 30	4 22	10 63	4 56	10 95	4 89	11 28	5 23	Dec	11 60	5 56	11 93	5 90	12 26	6 24	12 58	6 57	12 91	6 91
Dec	66	56	99	90	31	23	64	57	96	90	29	24	Dec	61	57	94	91	27	25	59	58	(24) 92	92
Dec	67*	57	10 00 (14)	91	32	24	65*	58	97	91	30	25	Dec	62	58	95	92	...	...	60	59	93	93
Nov	68	58	01	92	33	25	66	59	98	92	31	26	Nov	·73 68*	59	96	93	28	26	61	60	94	94
Nov	69	59	02	93	34	26	67	60	99	93	32	27	Nov	64	60	97	94	29*	27	(23) 62	61	95	95
Nov	70	60	...	...	35	27	...	...	11 00	94	33	28	Nov	65	61	98	95	30	28	63	62	...	...
Oct	(13) 71	61	03	94	36*	28	68	61	01	95	·72 34*	29	Oct	66	62	99	96	31	29	64	63	96	96
Oct	72	62	04	95	37	29	69	62	02	96	35	30	Oct	67	63	12 00*	97	32	30	65	64	97	97
Oct	73	63	05	96	38	30	70	63	03	97	...	...	Oct	68	64	01	98	(22) 33	31	66	65	98*	98
Sep	74	64	06	97	39	31	71	64	04	98	36	31	Sep	69	65	02	99	34	32	67	66	99	99
Sep	75	65	07*	98	40	32	72	65	·71 05*	99	37	32	Sep	70	66	03	6 00	35	33	68	67	13 00	7 00
Sep	...	...	08	99	...	...	73	66	06	5 00	38	33	Sep	71*	67	...	...	36	34	...	...	01	01
Aug	76	66	09	4 00	41	33	74	67	07	01	39	34	Aug	72	68	(21) 04	01	37	35	69*	68	02	02
Aug	77	67	10	01	42	34	75	68	08	02	40	35	Aug	73	69	05	02	38	36	70	69	03	03
Aug	78*	68	11	02	43	35	·70 76*	69	...	...	41	36	Aug	74	70	06	03	39	37	71	70	04	04
July	79	69	12	03	44	36	77	70	09	03	42*	37	July	(20) 75	71	07	04	40*	38	72	71	05	05
July	80	70	13	04	45	37	78	71	10	04	43	38	July	76	72	08	05	41	39	73	72	06	06
July	81	71	14	05	46	38	79	72	11	05	44	39	July	...	...	09	06	42	40	74	73	07	07
June	82	72	15	06	·69 47*	39	80	73	12	06	45	40	June	77	73	10	07	43	41	75	74	08	08
June	83	73	16	07	48	40	81	74	13*	07	(19) 46	41	June	78	74	11*	08	44	42	76	75	·79 09*	09
June	84	74	...	...	49	41	82	75	14	08	47	42	June	79	75	12	09	...	...	77	76	...	...
May	85	75	17	08	50	42	83	76	15	09	48	43	May	80	76	13	10	45	43	78	77	10	10
May	86	76	·67 18*	09	51	43	84*	77	16	10	49	44	May	81	77	14	11	46	44	79	78	11	11
May	87	77	19	10	52	44	...	...	(18) 17	11	...	...	May	82*	78	15	12	47	45	·78 80*	79	12	12
Apr	88	78	20	11	53	45	85	78	18	12	50	45	Apr	83	79	16	13	48	46	81	80	13	13
Apr	·67 89*	79	21	12	54	46	86	79	19	13	51	46	Apr	84	80	17	14	49	47	82	81	14	14
Apr	...	...	22	13	55	47	87	80	20	14	52	47	Apr	85	81	...	...	50	48	83	82	15	15
Mar	90	80	23	14	56*	48	(17) 88	81	21	15	53*	48	Mar	86	82	18	15	·77 51*	49	84	83	16	16
Mar	91	81	24	15	57	49	89	82	22	16	54	49	Mar	87	83	19	16	52	50	85	84	17*	17
Mar	92	82	25	16	...	...	90	83	23	17	55	50	Mar	88	84	20	17	53	51	...	...	18	18
Feb	93	83	26*	17	58	50	91	84	24*	18	56	51	Feb	89	85	21	18	54	52	86	85	19	19
Feb	94	84	27	18	(16) 59	51	92	85	25	19	57	52	Feb	90	86	·76 22*	19	55	53	87	86	20	20
Feb	95	85	...	...	60	52	93	86	...	...	58	53	Feb	...	...	23	20	...	...	88*	87	...	...
Jan	96	86	28	19	61	53	94	87	26	20	59	54	Jan	91	87	24	21	56	54	89	88	(25) 21	21
Jan	97*	87	29	20	62	54	95*	88	27	21	60	55	Jan	92	88	25	22	57	55	90	89	22	22
Jan	98	88	(15) 30	21	63	55	...	...	28	22	...	...	Jan	·74 93*	89	26	23	58	56	91	90	23	23

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 1323 to A.D. 1681.

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	**13** 23	**7** 24	**13** 56	**7** 58	**13** 88	**7** 91	**14** 21	**8** 25	**14** 54*	**8** 59	**14** 86	**8** 92
Dec	24	25	57	59	89	92	22	26	·85 55	60	87	93
Dec	25	26	58	60	90	98	23	27	...	...	88	94
Nov	26	27	59	61	91	94	24	28	56	61	89	95
Nov	27*	28	60	62	92	95	·84 25*	29	57	62	90	96
Nov	28	29	...	...	93	96	26	30	58	63	91*	97
Oct	29	30	61	63	94	97	27	31	59	64	92	98
Oct	30	31	62	64	95	98	28	32	60	65	93	99
Oct	31	32	63	65	·88 96*	99	...	...	61	66	94	**9** 00
Sep	32	33	64	66	87	**8** 00	29	33	62*	67	(31)95	01
Sep	33	34	65	67	98	01	30	34	63	68	96	02
Sep	34	35	66	68	99	02	31	35	64	69	...	...
Aug	35	36	·82 67*	69	**14** 00	03	32	36	65	70	97	03
Aug	36	37	68	70	01	04	33*	37	(30)66	71	98	04
Aug	...	...	69	71	02	05	34	38	67	72	99	05
July	37	38	70	72	03	06	35	39	68	73	**15** 00	06
July	·81 38*	39	71	73	04*	07	36	40	69	74	01	07
July	39	40	72	74	...	...	(29)37	41	...	...	02*	08
June	40	41	73	75	05	08	38	42	70	75	03	09
June	41	42	74	76	06	09	39	43	71	76	04	10
June	42	43	75*	77	07	10	40	44	72	77	05	11
May	43	44	76	78	(28)08	11	41	45	73*	78	06	12
May	44	45	...	...	09	12	42	46	74	79	07	13
May	45	46	77	79	10	13	43	47	75	80	08	14
Apr	46*	47	78	80	11	14	44*	48	76	81	09	15
Apr	47	48	(27)79	81	12	15	45	49	77	82	10	16
Apr	48	49	80	82	13	16	...	...	78	83	...	...
Mar	49	50	81	83	14	17	46	50	79	84	11	17
Mar	(26)50	51	82	84	15*	18	47	51	80	85	12	18
Mar	...	...	83	85	16	19	48	52	81	86	·87 13*	19
Feb	51	52	84	86	17	20	49	53	82	87	14	20
Feb	52	53	85	87	18	21	50	54	83	88	15	21
Feb	53	54	86*	88	...	...	51	55	...	...	16	22
Jan	54	55	87	89	19	22	52	56	·86 84*	89	17	23
Jan	55	56	88	90	20	23	53	57	85	90	18	24
Jan	56*	57	...	...	21	24	54	58	86	91	19	25

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	**15** 19	**9** 26	**15** 51	**9** 59	**15** 84	**9** 93	**16** 16	**10** 26	**16** 49	**10** 60
Dec	·20	27	52	60	85	94	17	27	50	61
Dec	21*	28	(33)53	61	86	95	18*	28	51	62
Nov	22	29	54	62	87	96	19	29	52	63
Nov	23	30	55	63	88	97	20	30	53	64
Nov	...	...	56	64	...	...	21	31	54	65
Oct	(32)24	31	57	65	89*	98	22	32	55	66
Oct	25	32	58	66	90	99	23	33	56	67
Oct	26	33	59	67	91	**10** 00	24	34	...	...
Sep	27	34	60*	68	92	01	25	35	57	68
Sep	28	35	61	69	93	02	26	36	·98 58*	69
Sep	29	36	...	...	94	03	27	37	59	70
Aug	30	37	62	70	95	04	28	38	60	71
Aug	31*	38	63	71	96	05	·92 29*	39	61	72
Aug	32	39	64	72	97	06	...	...	62	73
July	33	40	65	73	98	07	30	40	63	74
July	34	41	66	74	99	08	31	41	64	75
July	...	...	67	75	**16** 00*	09	32	42	65	76
June	35	42	68	76	·91 01	10	33	43	66*	77
June	36	43	69	77	02	11	34	44	67	78
June	37	44	70	78	03	12	35	45	68	79
May	38	45	·90 71*	79	04	13	36	46	69	80
May	39	46	72	80	05	14	37*	47	(37)70	81
May	40	47	73	81	...	...	38	48	...	...
Apr	41	48	74	82	06	15	39	49	71	82
Apr	·88 42*	49	75	83	07	16	40	50	72	83
Apr	43	50	...	...	08*	17	(36)41	51	73	84
Mar	44	51	76	84	09	18	42	52	74	85
Mar	45	52	77	85	10	19	43	53	75	86
Mar	46	53	78	86	11	20	...	...	76	87
Feb	47	54	79*	87	(35)12	21	44	54	77*	88
Feb	48	55	80	88	13	22	45	55	78	89
Feb	...	...	81	89	14	23	46	56	79	90
Jan	49	56	82	90	15	24	47	57	80	91
Jan	50*	57	(34)83	91	16	25	48*	58	81	92
Jan	51	58	84	92	...	...	49	59	...	...

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 1681 to A.D. 2000.

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	1681	1093	1714	1127	1747	1161	1780	1195	1813	1229
Dec	82	94	15	28	48	62	81	96	14	30
Dec	83	95	·95 16*	29	...	...	82*	97	(42)15	31
Nov	84	96	17	30	49	63	33	98	16	32
Nov	85	97	18	31	50	64	84	99	17	33
Nov	86	98	19	32	51	65	85	1200	...	...
Nov	...	...	...	...	52	66	...	...	...	...
Oct	·94 87*	99	20	33	53*	67	(41)86	01	18	34
Oct	88	1100	21	34	54	68	87	02	19	35
Oct	89	01	22	35	55	69	88	03	20	36
Sep	90	02	23	36	56	70	89	04	21	37
Sep	91	03	24*	37	(40)57	71	90	05	22*	38
Sep	92	04	...	...	58	72	...	...	23	39
Aug	93	05	25	38	59	73	91	06	24	40
Aug	94	06	26	39	60	74	92	07	25	41
Aug	95*	07	27	40	61	75	93*	08	26	42
July	96	08	(39)28	41	62	76	94	09	27	43
July	97	09	29	42	63	77	95	10	28	44
July	...	...	30	43	...	...	96	11	...	...
June	98	10	31	44	64*	78	97	12	29	45
June	(38)99	11	32	45	65	79	98	13	30	46
June	17 00	12	33	46	66	80	99	14	31	47
May	01	13	34	47	67	81	18 00	15	32	48
May	02	14	35*	48	68	82	01	16	·00 (1d) 33*	49
May	03	15	36	49	69	83	02	17	34	50
Apr	04	16	37	50	70	84	03	18	35	51
Apr	05	17	38	51	71	85	·99 04*	19	36	52
Apr	06*	18	...	...	72	86	05	20	37	53
Mar	07	19	39	52	73	87	06	21	38	54
Mar	08	20	40	53	74	88	07	22	39	55
Mar	09	21	41	54	·98 75*	89	...	...	40	56
Feb	10	22	42	55	76	90	08	23	41*	57
Feb	11	23	43	56	77	91	09	24	42	58
Feb	...	...	44	57	...	...	10	25	43	59
Jan	12	24	45	58	78	92	11	26	44	60
Jan	13	25	·97 46*	59	79	93	12*	27	(43)45	61
Jan	14	26	47	60	80	94	13	28	...	...

	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.	A.D.	H.
Dec	1845	1262	1878	1296	1911	1330	1943	1363	1976	1397
Dec	46	63	79	97	12	31	44	64	77	98
Dec	47	64	80*	98	...	...	45	65	·06 (1d) 78*	99
Nov	48	65	81	99	13	32	46	66	79	1400
Nov	49	66	82	1300	14	33	47	67	80	01
Nov	50	67	83	01	15	34	48	68	...	...
Nov	...	...	...	...	...	...	...	...	...	...
Oct	51*	68	84	02	16	35	·05 (1d) 49*	69	81	02
Oct	52	69	85	03	17	36	50	70	82	03
Oct	53	70	...	...	18	37	51	71	83	04
Sep	54	71	86	04	19	38	52	72	84	05
Sep	55	72	87	05	·04 (1d) 20*	39	53	73	85	06
Sep	56	73	88	06	21	40	...	...	86*	07
Aug	57	74	89	07	22	41	54	74	87	08
Aug	58	75	90	08	23	42	55	75	88	09
Aug	...	...	·02 (1d) 91*	09	24	43	56	76	89	10
July	59	76	92	10	25	44	57*	77	(48)90	11
July	60	77	93	11	26	45	58	78	91	12
July	61	78	94	12	27	46	59	79	92	13
June	·01 (1d) 62*	79	95	13	28*	47	60	80	93	14
June	63	80	96	14	29	48	(47)61	81	94	15
June	64	81	97	15	...	...	62	82	...	...
May	65	82	98	16	30	49	63	83	95	16
May	66	83	99*	17	31	50	64	84	96	17
May	67	84	19 00	18	(46)32	51	65	85	97*	18
Apr	68	85	01	19	33	52	66	86	98	19
Apr	69	86	02	20	34	53	67	87	99	20
Apr	70*	87	...	...	35	54	...	...	20 00	21
Mar	71	88	(45)03	21	36	55	68*	88	...	...
Mar	72	89	04	22	37	56	69	89	...	...
Mar	73	90	05	23	38	57	70	90	...	...
Feb	(44)74	91	06	24	39*	58	71	91	...	...
Feb	75	92	07	25	40	59	72	92	...	...
Feb	...	...	08	26	...	...	73	93	...	...
Jan	76	93	09	27	41	60	74	94	...	...
Jan	77	94	10*	28	42	61	75	95	...	...
Jan	78	95	11	29	43	62	76	96	...	...

TABLE XV.—Explanation.

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 622 to A.D. 2000.

1. This table shows the A.D. year and month when each Hijra year begins.

2. Hijra years are divided into cycles of 30 each. From 622 A.D. to 2000 A.D. there are 48 such cycles, the first cycle being an incomplete one of 29 years. The cycles are indicated by the figures between brackets.

3. The actual date of the A.D. month marking the commencement of each Hijra year can be obtained from Table X by adding 1, 2 or 3 days, according to the following rules, to the date of mean new-moon shown in that table.

(*a*) Subject to the exceptions noted in Rule (*c*) below, 2 days are to be added to the date of mean new-moon when the fraction of day shown in Table X against the mean new-moon does not exceed the decimal figure printed in italic under each cycle in this table. When this figure is exceeded, add 3 days.

(*b*) The figure printed in italic may be called the 'argument of the crescent' and the quantity to be added to the date of mean new-moon, whether 1, 2 or 3 days, may be called the 'equation of the crescent'. In cycles (1) to (41), the highest argument for an equation of 2 days is shown against the year in which that argument occurs. For instance, in the 30th cycle, the maximum argument for an equation of 2 days is ·86 which is entered against A.D. 1484, H. 889. This entry means that in the 30th cycle, whenever the fraction of day set against a new moon in Table X, is ·86 (as in January 1484 A.D.) or less, 2 days are to be added to the date of mean new moon in order to get the commencement of the corresponding Hijra year. Otherwise, that is, if the fraction of day exceeds ·86, 3 days should be added. Thus, taking 10 successive years of the 30th cycle, the dates of commencement of the corresponding Hijra years are ascertained as follows from this Table and Table X :—

A.D. year.	Month.	Day and fraction of day.	Hijra year.	Commencement of Hijra year.
1480	March	11·39	885	13th March
1481	February	28·76	886	2nd March
1482	February	18·13	887	20th February
1483	February	7·50	888	9th February
1484	January	27·86	889	29th January
1485	January	16·23	890	18th January
1486	January	5·60	891	7th January
1486	December	25·96	892	28th December
1487	December	15·33	893	17th December
1488	December	3·70	894	5th December

(*c*) From the 42nd to the 48th cycles (A.D. 1815—2000), the additions to be made to mean new moon dates in order to get the commencement of Hijra years are 1 day and 2 days respectively, according as the limit shown in this table is not, or is, exceeded. Thus in the 42nd cycle, 1 day has to be added only when the fraction of day of mean new moon is ·00, *i.e.*, in the year 1833, when new moon fell on May 19·00. The corresponding Hijra year 1249, therefore, commenced on 20th May 1833. In all other years of this cycle the number of days to be added to mean new moon in order to get the commencement of Hijra year is 2. Similarly in 1862, mean new-moon fell on June 27·01 and the Hijra year 1279 commenced on 28th June. In A.D. 1978, the Hijra year will commence on Dec. 1, because new-moon will fall on Nov. 30·06, and ·06, is the argument of the crescent for that cycle.

4. The 2nd, 5th, 8th, 10th, 13th, 15th, 19th, 21st, 24th, 27th and 29th years in each cycle are leap years according to the present table, that is, they will be found to contain 355 days instead of 354. In certain countries, however, the 7th, 18th and 26th years of each cycle are reckoned as leap years instead of the 8th, 19th and 27th. Under the former reckoning, the 8th, 19th and 27th years following as they do, certain leap years, would begin 1 day later than they do according to the present table. For the convenience of reference, the 8th, 19th and 27th years of each cycle are marked by an asterisk. The reader will understand that the date of commencement of such Hijra years, as determined by the rules above laid down, is liable to be increased by 1 day in those countries where the 7th, 18th and 26th years of each cycle are regarded as leap years.

TABLE XVI.

Modern Equations for Lunar Inequalities.

A.—Equation for Lunar Variation.

Tithis	2 × (☾'s—☉'s Long.)	d.	g.	p.	d.	g.	p.	Eqn. g.	Eqn. p.
1	24°	1	50	13	29	23	30	—1	11
2	48°	3	40	26	31	13	43	—2	11
3	72°	5	30	39	33	3	56	—2	47
4	96°	7	20	52	34	54	9	—2	55
5	120°	9	11	6	36	44	23	—2	32
6	144°	11	1	19	38	34	36	—1	43
7	168°	12	51	32	40	24	49	—0	37
8	192°	14	41	45	42	15	2	+0	37
9	216°	16	31	58	44	5	15	+1	43
10	240°	18	22	11	45	55	28	+2	32
11	264°	20	12	24	47	45	41	+2	55
12	288°	22	2	37	49	35	54	+2	47
13	312°	23	52	50	51	26	7	+2	11
14	336°	25	43	3	53	16	20	+1	11
15	360°	27	33	17	55	6	33	+0	0

TABLE XVI.—Modern Equations for

B.—☾'s Anomaly in days, ghatikas and palas and corresponding Equation of the

Eqn. Palas.	0gh.	1	2.	3	4	5	6	7	8	9
	0	← Days of Anom. →					0	I	I	I
	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.
0	0, 6	8,30	17, 0	25,34	34, 8	42,43	51,22	0,10	8,53	17,41
1	0, 9	8,39	17,13	25,43	34,17	42,52	51,31	0,14	8,58	17,15
2	0,14	8,48	17,18	25,52	34,27	43, 1	51,40	0,23	9, 7	17,55
3	0,23	8,57	17,27	26, 1	34,31	43,10	51,45	0,33	9,16	18, 4
4	0,32	9, 6	17,36	26,11	34,41	43,19	51,54	0,42	9,25	18,14
5	0,41	9,11	17,46	26,20	34,50	43,29	52, 7	0,51	9,35	18,23
6	0,50	9,20	17,55	26,29	34,59	43,38	52,17	1, 0	9,44	18,32
7	1, 0	9,30	17,59	26,34	35, 8	43,47	52,21	1, 9	9,53	18,41
8	1, 9	9,39	18, 8	26,43	35,17	43,52	52,30	1,19	9,58	18,50
9	1,18	9,48	18,18	26,52	35,26	44, 1	52,40	1,28	10, 7	18,59
10	1,27	9,53	18,27	27, 1	35,31	44,10	52,49	1,37	10,16	19, 9
11	1,32	10, 2	18,36	27,11	35,40	44,19	52,58	1,46	10,25	19,13
12	1,41	10,11	18,45	27,20	35,49	44,28	53, 7	1,55	10,34	19,23
13	1,50	10,20	18,50	27,29	35,59	44,33	53,17	2, 5	10,43	19,31
14	2, 0	10,29	18,59	27,38	36, 8	44,42	53,25	2, 9	10,53	19,46
15	2, 9	10,38	19, 8	27,47	36,17	44,51	53,35	2,18	11, 2	19,54
16	2,13	10,48	19,17	27,52	36,26	45, 0	53,39	2,28	11,11	19,59
17	2,22	10,57	19,26	28, 1	36,35	45,10	53,49	2,37	11,20	20, 8
18	2,32	11, 6	19,36	28,10	36,44	45,19	53,58	2,46	11,29	20,18
19	2,41	11,10	19,45	28,19	36,49	45,28	54, 7	2,55	11,38	20,27
20	2,50	11,20	19,54	28,24	36,58	45,37	54,16	3, 4	11,48	20,36
21	2,59	11,29	20, 3	28,38	37, 7	45,46	54,25	3,13	11,57	20,45
22	3, 8	11,38	20, 8	28,42	37,17	45,51	54,35	3,23	12, 1	20,54
23	3,17	11,43	20,17	28,51	37,26	46, 0	54,44	3,27	12,11	21, 4
24	3,27	11,52	20,26	29, 1	37,35	46, 9	54,53	3,36	12,20	21,13
25	3,31	12, 1	20,36	29,10	37,44	46,19	55, 2	3,45	12,29	21,17
26	3,40	12,10	20,45	29,19	37,53	46,28	55,11	3,59	12,38	21,26
27	3,50	12,20	20,54	29,28	38, 2	46,37	55,20	4, 8	12,48	21,36
28	3,59	12,29	21, 3	29,37	38, 7	46,46	55,30	4,13	12,57	21,49
29	4, 3	12,38	21,12	29,42	38,16	46,55	55,34	4,22	13, 6	21,54
30	4,13	12,47	21,21	29,51	38,26	47, 4	55,43	4,31	13,15	22, 3
31	4,22	12,56	21,26	30, 0	38,34	47, 9	55,52	4,41	13,20	22,12
32	4,31	13, 1	21,35	30, 9	38,39	47,18	56, 2	4,50	13,29	22,21
33	4,40	13,10	21,44	30,19	38,49	47,27	56,11	4,59	13,43	22,31
34	4,49	13,19	21,53	30,23	38,58	47,37	56,20	5, 8	13,52	22,40
35	4,59	13,28	21,58	30,32	39, 7	47,46	56,29	5,18	13,56	22,49
36	5, 8	13,38	22, 7	30,41	39,16	47,55	56,38	5,27	14, 6	22,58
37	5,17	13,42	22,16	30,51	39,25	48, 4	56,48	5,31	14,15	23, 8
38	5,22	13,51	22,26	31, 0	39,34	48,13	56,52	5,40	14,24	23,12
39	5,31	14, 0	22,35	31, 9	39,44	48,22	57, 2	5,50	14,33	23,21
40	5,40	14,10	22,44	31,19	39,53	48,27	57,10	5,59	14,42	23,30
41	5,49	14,19	22,53	31,28	39,57	48,36	57,20	6, 8	14,51	23,39
42	5,58	14,28	23, 2	31,37	40, 7	48,45	57,33	6,17	15, 1	23,54
43	6, 3	14,37	23,11	31,41	40,16	48,55	57,38	6,26	15,10	23,58
44	6,12	14,46	23,16	31,51	40,25	49, 4	57,47	6,35	15,14	24, 7
45	6,21	14,56	23,26	32, 0	40,34	49,13	57,57	6,45	15,24	24,16
46	6,30	15, 0	23,34	32, 9	40,43	49,22	58, 6	6,49	15,38	24,26
47	6,40	15, 9	23,44	32,18	40,52	49,32	58,15	6,58	15,46	24,35
48	6,49	15,18	23,53	32,27	41, 2	49,41	58,24	7,12	15,56	24,44
49	6,58	15,28	24, 2	32,36	41,11	49,45	58,33	7,21	16, 0	24,53
50	7, 7	15,32	24,11	32,46	41,15	49,54	58,43	7,26	16, 9	25, 2
51	7,16	15,41	24,21	32,55	41,24	50, 4	58,52	7,35	16,19	25,11
52	7,21	15,51	24,30	32,59	41,34	50,13	58,56	7,44	16,28	25,16
53	7,30	16, 0	24,34	33, 9	41,43	50,22	59, 5	7,53	16,37	25,25
54	7,39	16, 9	24,43	33,18	41,52	50,31	59,15	8, 3	16,46	25,34
55	7,48	16,18	24,53	33,27	42, 1	50,40	59,19	8,12	16,56	25,44
56	7,53	16,28	25, 2	33,31	42,10	50,50	59,33	8,21	17, 5	25,53
57	8, 2	16,37	25,11	33,41	42,20	50,59	59,42	8,30	17,14	26, 7
58	8,11	16,46	25,16	33,50	42,29	51, 3	59,51	8,39	17,18	26,16
59	8,20	16,50	25,25	33,59	42,34	51,12	1 0, 0	8,44	17,28	26,29

Eqn. Palas.	10gh.	11	12	13	14	15	16	17	18	19
	I	I	I	I	II	II	II	II	II	II
	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.	g.p.
0	26,39	35,36	44,52	54,12	3,32	13,16	23, 8	33, 5	43,25	54, 3
1	26,43	35,45	45, 1	54,17	3,46	13,25	23,13	33,14	43,34	54,13
2	26,52	35,54	45, 5	54,26	3,55	13,34	23,26	33,28	43,43	54,22
3	27, 1	36, 4	45,15	54,40	4, 4	13,43	23,36	33,37	43,52	54,35
4	27,15	36,13	45,28	54,49	4,13	13,52	23,45	33,46	44, 6	54,45
5	27,20	36,22	45,38	54,53	4,23	14, 1	23,54	33,55	44,15	54,54
6	27,29	36,31	45,47	55, 2	4,32	14,15	24, 3	34, 1	44,29	55, 8
7	27,38	36,40	45,52	55,16	4,46	14,20	24,17	34,19	44,34	55,17
8	27,48	36,49	46, 5	55,25	4,50	14,29	24,26	34,23	44,47	55,30
9	28, 1	36,59	46,14	55,35	5, 0	14,43	24,35	34,37	44,57	55,40
10	28, 6	37, 8	46,24	55,44	5,13	14,52	24,49	34,46	45,10	55,52
11	28,15	37,17	46,33	55,53	5,23	14,56	24,54	35, 0	45,15	56, 3
12	28,24	37,26	46,42	56, 2	5,32	15,10	25, 3	35, 9	45,29	56,12
13	28,33	37,35	46,51	56,11	5,41	15,20	25,16	35,14	45,38	56,26
14	28,43	37,44	47, 0	56,20	5,50	15,29	25,21	35,27	45,52	56,35
15	28,52	37,54	47, 9	56,30	5,59	15,38	25,35	35,32	46, 1	56,44
16	29, 1	38, 3	47,19	56,39	6, 8	15,47	25,44	35,46	46,10	56,58
17	29,10	38,12	47,28	56,48	6,18	15,56	25,53	35,50	46,20	57, 7
18	29,19	38,21	47,37	56,57	6,27	16, 6	26, 7	36, 4	46,33	57,21
19	29,29	38,30	47,46	57, 7	6,36	16,19	26,11	36,13	46,42	57,30
20	29,38	38,39	47,55	57,16	6,50	16,24	26,26	36,27	46,52	57,39
21	29,47	38,49	48, 5	57,25	6,59	16,38	26,35	36,36	47, 1	57,53
22	29,56	38,58	48,14	57,34	7, 8	16,47	26,44	36,45	47,15	58, 7
23	30, 5	39, 7	48,23	57,43	7,17	16,56	26,53	36,54	47,24	58,11
24	30,14	39,16	48,32	57,52	7,26	17, 5	27, 2	37, 8	47,37	58,25
25	30,24	39,26	48,41	58, 2	7,36	17,14	27,16	37,17	47,42	58,34
26	30,33	39,30	48,50	58,11	7,45	17,23	27,25	37,27	47,56	58,48
27	30,42	39,39	49, 0	58,25	7,54	17,33	27,34	37,36	48, 5	59, 2
28	30,47	39,53	49,14	58,29	8, 3	17,46	27,44	37,50	48,19	59, 6
29	30,56	40, 2	49,18	58,38	8,17	17,51	27,53	37,58	48,23	59,20
30	31, 5	40,12	49,27	58,47	8,26	18, 5	28, 6	38,13	48,37	59,29
31	31,14	40,16	49,36	59, 1	8,35	18,14	28,16	38,17	48,47	59,43
32	31,23	40,25	49,50	59, 6	8,45	18,23	28,25	38,31	49, 0	59,53
33	31,33	40,39	49,59	59,15	8,54	18,37	28,34	38,40	49, 9	3 0, 2
34	31,42	40,48	50, 4	59,29	9, 3	18,41	28,43	38,54	49,19	0,15
35	31,51	40,53	50,13	59,38	9,12	18,56	28,57	38,59	49,28	0,29
36	32, 0	41, 2	50,27	59,47	9,21	19, 4	29, 6	39,12	49,42	0,38
37	32, 5	41,11	50,36	59,52	9,30	19,14	29,15	39,22	49,51	0,48
38	32,19	41,20	50,41	2 0, 5	9,44	19,23	29,24	39,35	50, 0	0,57
39	32,28	41,34	50,50	0,15	9,53	19,32	29,34	39,44	50, 9	1,10
40	32,37	41,39	51, 4	0,24	9,58	19,46	29,47	39,54	50,23	1,24
41	32,41	41,48	51,13	0,33	10,12	19,55	29,52	40, 3	50,32	1,29
42	32,51	41,57	51,22	0,42	10,21	20, 4	30, 6	40,17	50,46	1,43
43	33, 4	42,11	51,31	0,52	10,30	20,13	30,15	40,26	50,50	1,56
44	33,14	42,15	51,40	1, 0	13,39	20,23	30,24	40,35	51, 4	2, 6
45	33,23	42,24	51,50	1,15	10,48	20,36	30,38	40,44	51,13	2,19
46	33,27	42,34	51,59	1,19	10,58	20,46	30,43	40,58	51,27	2,24
47	33,36	42,43	52, 8	1,28	11,11	20,55	30,56	41, 7	51,36	2,38
48	33,46	42,52	52,17	1,38	11,21	21, 4	31, 6	41,21	51,50	2,51
49	33.59	43, 2	52,26	1,51	11,25	21,13	31,15	41,25	51,59	3, 1
50	34, 4	43,11	52,35	1,56	11,39	21,27	31,24	41,39	52,13	3,10
51	34,13	43,20	52,45	2,10	11,48	21,36	31,33	41,49	52,22	3,19
52	34,22	43,34	52,54	2,19	11,57	21,45	31,47	42, 2	52,32	3,33
53	34,32	43,43	53, 3	2,28	12, 7	21,54	31,56	42, 7	52,45	3,46
54	34,46	43,52	53,12	2,37	12,16	22, 4	32, 5	42,21	52,54	3,56
55	34,50	44, 1	53,21	2,46	12,25	22,17	32,14	42,30	53, 8	4, 5
56	34,59	44,10	53,30	2.55	12,34	22,22	32,24	42,44	53,17	4,19
57	35, 9	44,24	53,40	3, 5	12,48	22,36	32,37	42,53	53,27	4,28
58	35.18	44,29	53,49	3,18	12,53	22,45	32,47	43, 2	53,40	4,42
59	35,27	44,38	53,58	3,23	13, 2	22,54	32,56	43,11	53,50	4,51

centre in ghatikas and palas.

Eqn. Palas.	20gh. III g.p.	21 III g.p.	22 III g.p.	23 III g.p.	24 III g.p.	25gh. IV g.p.	26 IV g.p.	27 IV g.p.	28 IV g.p.	29 V g.p.	30 V g.p.
0	5, 0	16,24	28,11	40,32	53,45	7,45	22,41	39,13	57,45	19,38	48,39
1	5,14	16,33	28,21	40,49	53,59	7,55	23, 0	39,32	57,58	20, 1	49,20
2	5,23	16,47	28,34	41, 3	54, 8	8, 9	23,18	39,45	58,21	20,29	49,48
3	5,37	16,56	28,48	41.17	54,22	8,27	23,32	40, 4	58,44	20,51	50.29
4	5,46	17,10	29, 1	41,26	54,36	8,41	23,46	40,23	59, 3	21,14	51,10
5	5,54	17,24	29,11	41,40	54,54	8,50	24, 4	40,45	59,21	21,38	51,47
6	6, 9	17,33	29,25	41.49	55, 8	9, 8	24,18	41, 4	59,44	22, 5	52,28
7	6,18	17,42	29,39	42, 3	55,17	9,22	24,36	41,17	5 0, 3	22,28	52,56
8	6,27	17,56	29,52	42,12	55,31	9,40	24,50	41,36	0,25	22,51	53,37
9	6,41	18,10	30, 2	42,26	55,45	9,54	25, 4	41,59	0,48	23,19	54,18
10	6,50	18,19	30,11	42,40	55,58	10, 8	25,22	42,17	1, 2	23,41	55, 0
11	7, 4	18,28	30,25	42,54	56,12	10,22	25,40	42,31	1,25	24, 9	55,23
12	7,13	18,41	30,39	43, 7	56,26	10,36	25,59	42,49	1,48	24,37	56, 4
13	7,22	18,56	30,52	43,16	56,40	10,54	26, 8	43, 7	2,11	24,55	56,45
14	7,36	19,10	31, 2	43,30	56,54	11, 3	26,26	43,26	2,25	25,18	57,27
15	7,45	19,19	31,15	43,44	57, 8	11,22	26,45	43,44	2,48	25,45	58, 8
16	7,59	19,28	31,29	43,53	57,17	11,35	27, 3	43,58	3,11	26,13	58,36
17	8, 8	19,42	31,43	44, 7	57,30	11,49	27,12	44,17	3,34	26,41	59,17
18	8,22	19,56	31,56	44,20	57,44	12, 8	27,31	44,35	3,52	27,13	59,54
19	8,36	20, 5	32, 7	44,34	57,55	12,17	27,49	44,58	4,10	27,40	6 0,35
20	8,45	20,14	32,19	44,48	58, 4	12,35	28, 7	45,12	4,33	28,12	1, 3
21	8,59	20,28	32,33	45, 2	58,25	12,49	28,21	45,30	4,52	28,35	1,39
22	9, 8	20,41	32,47	45,16	58,39	13, 3	28,35	45,48	5,15	29, 7	2,39
23	9,17	20,51	32,56	45,29	58,53	13,16	28,53	46, 7	5,28	29,40	3,34
24	9,26	21, 0	33,10	45,44	59, 7	13,30	29, 7	46,30	5,51	30,12	4,29
25	9,40	21,14	33,19	45,57	59,16	13,48	29,25	46,39	6,14	30,44	5,11
26	9,45	21,28	33,33	46, 6	59,34	14, 2	29,39	47, 2	6,37	31, 7	6, 6
27	9,58	21,36	33,47	46,20	59,48	14,16	29,57	47,20	7, 0	31,34	7, 1
28	10,12	21,46	33,56	46,34	4 0, 2	14,30	30,11	47,38	7,14	32, 7	7,56
29	10,26	21,59	34,10	46,52	0,11	14,43	30,30	47,52	7,37	32,39	8,37
30	10,35	22,13	34,24	47, 6	0,25	15, 1	30,48	48,10	8, 0	33,11	9,32
31	10,44	22,27	34,37	47,15	0,39	15,16	30,57	48,29	8,23	33,29	10,32
32	10,58	22,36	34,47	47,29	0,57	15,25	31,16	48,52	8,42	34, 2	11,27
33	11,12	22,46	35, 0	47,42	1, 6	15,43	31,34	49,10	9, 9	34,34	12,27
34	11,21	22,59	35,14	47,56	1,20	15.57	31,53	49,24	9,32	35, 6	13, 8
35	11,30	23,13	35,28	48, 6	1,34	16,16	32, 2	49,42	9,59	35,20	14, 4
36	11,44	23,22	35,42	48,24	1,52	16,29	32,20	50, 1	10,18	35,56	14,59
37	11,58	23,31	35,51	48,37	2, 6	16,38	32,38	50,19	10,32	36,20	15,54
38	12, 7	23,45	36, 0	48,51	2,20	16,57	32,57	50,33	10,55	37, 1	16,35
39	12,21	23,59	36,14	49, 5	2,33	17,11	33,15	50,51	11,18	37,33	17,30
40	12,30	24, 8	36,27	49,15	2,52	17,29	33,24	51,14	11,36	37,56	18,21
41	12,44	24,22	36,37	49,28	3, 6	17,38	33,43	51,33	11,59	38,28	18,53
42	12,53	24,31	36,50	49,42	3,20	17,52	34, 1	51,51	12,22	39, 0	21, 1
43	13, 7	24,45	37, 4	50, 0	3,33	18,10	34,15	52, 9	12,49	39,32	22, 6
44	13,16	24,54	37,17	50,10	3,47	18,20	34,29	52,23	13,12	39,50	23,37
45	13,30	25, 8	37,32	50,23	4, 6	18,42	34,47	52,46	13,40	40,23	25, 9
46	13,39	25,17	37,41	50,37	4,19	18,56	35, 1	53, 9	13,58	40,55	26,46
47	13,53	25,30	37,55	50,51	4,28	19,10	35,19	53,23	14,21	41,27	27,50
48	14, 6	25,40	38, 9	51, 5	4,47	19,28	35,33	53,41	14,49	41,59	29,27
49	14,16	25,54	38,22	51,14	5, 0	19,47	35,51	54, 4	15,16	42,17	31, 7
50	14,29	26, 8	38,32	51,32	5,19	20, 1	36, 9	54,27	15,35	42,50	32,53
51	14,38	26,17	38,45	51,46	5,29	20,19	36,28	54,45	15,58	43,22	34,25
52	14,53	26,26	38,54	52, 0	5,42	20,33	36,51	54,59	16,25	43,54	35,11
53	15, 8	26,40	39, 8	52, 9	6, 0	20,51	37, 5	55,18	16,53	44,26	36, 6
54	15,15	26,53	39,22	52,23	6,13	21, 9	37,23	55,36	17,20	44,49	40,32
55	15,29	27, 7	39,31	52,36	6,25	21,19	37,42	55,59	17,39	45,30	45, 0
56	15,38	27,16	39,45	52,51	6,41	21,37	38, 0	56,13	18, 2	46,12	50, 0
57	15,52	27,30	39,59	53, 9	6,55	21,55	38,19	56,36	18,24	46,53	53,19
58	16, 1	27,44	40,12	53,18	7,15	22,14	38,32	56,59	18,52	47,20	...
59	16,11	27,58	40,22	53,32	7,28	22,23	38,55	57,22	19,11	47,57	..

C.—Eqn., for evection in gh., and palas.

Argument: 2 × (☾'s − ☉'s Longitude) − ☾'s Anomaly.

Eqn. Palas.	0gh. 0 g.p.	1 Days g.p.	2 I g.p.	3 II g.p.	4 II g.p.	5 III g.p.	6 V g.p.
0	0, 0	40,11	20,59	4, 9	51,23	46, 2	5 0,21
1	0,41	40,39	21,45	5, 0	52,13	47,11	2, 6
2	1, 9	41,24	22,31	5,36	52,59	48,15	3,15
3	1,55	42, 6	23,17	6,22	53,50	49,19	4,56
4	2,36	42,52	23,44	7, 8	54,45	50, 5	6,42
5	3,17	43,19	24,30	7,59	55,26	51,14	8,23
6	4, 4	44, 5	25,16	8,49	55,59	52,23	9,59
7	4,31	44,47	26, 7	9,21	57,12	53,27	11,31
8	5,17	45,32	26,24	10, 7	58, 7	54,13	13,40
9	5,58	46,14	27,16	10,58	59, 6	55,22	15,49
10	6,40	46,42	27,42	11,48	59.43	56,31	17,53
11	7, 7	47,27	28,47	12,25	3 0,39	57,39	19,14
12	7,53	48, 9	29,33	13,11	1,34	58,49	21,14
13	8,39	48,54	30, 1	13,57	2,29	59,34	23 19
14	9,20	49.22	30,47	14,47	3, 9	4 1, 6	25,18
15	10, 2	50, 8	31,33	15,33	4, 1	1,57	27,13
16	10,29	50,50	32,19	16,10	4,56	3,10	28,49
17	11,15	51,40	32,51	16,56	5,51	3,56	31,16
18	11,56	52,17	33,37	17,47	6,51	5,15	33,43
19	12,42	52,44	34,23	18, 1	7,32	6,28	36,10
20	13, 5	53,30	35, 9	19,14	8,22	7,42	37,51
21	13,51	54,16	35,54	20, 0	9,27	8,55	40,18
22	14,37	55, 2	36.27	20,50	10,18	9,45	42,50
23	15,18	55,29	37,13	21,41	10,58	10,59	44,26
24	16, 4	56,15	37,59	22,31	11,53	12,12	50,14
25	16,27	56,57	38,44	23, 8	12,53	13,26	50,47
26	17,13	57,43	39,18	23,54	13,53	14,16	53,55
27	17,59	58,29	40, 2	24,44	14,52	15,30	57, 4
28	18,45	58,52	40,49	25,39	15,34	16,43	6 0,12
29	19,13	59,38	41,34	26,16	16,29	18,20	1,39
30	19,58	1 0,23	42,21	27, 2	17,29	19,15	7, 1
31	20, 4	1, 9	42,52	27,53	18,29	20,10	11,36
32	21,26	1,37	43,20	28,44	19,10	21,33	16,12
33	22, 8	2,23	44,24	29.34	20, 5	22,55	18,53
34	22,35	3, 4	45,10	30,10	21, 5	24,18	26,22
35	23,20	3,45	45,42	30,57	22, 4	25, 8	36, 6
36	24, 3	4,32	46,28	31,47	23, 4	26,31	53,19
37	24,43	4,59	47,14	32,37	23,42	27,54	...
38	25,11	5,45	48,41	33,14	24,41	29,16	...
39	25,57	6,31	48,50	34, 5	25,40	30,39	...
40	26,43	7,13	49,23	35, 0	26,40	31,34	...
41	27,24	7,40	50, 9	35,46	27,26	31,57	...
42	28, 6	8,26	50,55	36,41	28,21	34,20	...
43	28,32	8,53	51,45	37,18	29,26	35,33	...
44	29,19	9,58	52,17	38, 8	30,30	36,33	...
45	30, 0	10,43	53, 3	39, 4	31,34	38, 5	...
46	30,46	11,12	53,49	39,53	32,15	39,36	...
47	31,14	11,57	54,35	40,35	33,15	41, 9	...
48	32, 0	12,43	55,26	41,21	34,19	42,40	...
49	32,41	13,29	55,58	42,16	35,23	43,40	...
50	33,22	13,57	56,44	43, 7	36, 9	45,12	...
51	34, 9	14,42	57,30	44, 1	37, 9	46,44	...
52	34,27	15,28	58,15	44,38	38, 9	48,52	...
53	35,17	16,14	58,48	45,30	39,13	49,15	...
54	36, 3	17, 0	59, 2	46,25	40,17	50,47	...
55	36,49	17,28	2 0,33	47,15	41, 3	52,46	...
56	37,12	18,14	1,14	47,56	42, 3	53,55	...
57	37,59	18,59	2, 1	48,46	43, 3	55,41	...
58	38,44	19,46	2,37	49,37	43,53	56,59	...
59	39,30	20,13	3,23	50,32	44,58	58,35	...

TABLE XVII.—MARS.

Data for calculating Latitude and geocentric Longitude of Mars from B.C. 1 to A.D. 2000.

Mars' mean motion for Centuries.

A.D.	Kaliyuga.	Mean long. at commencement of Solar Year.	Longitude of apsis.	Longitude of node.
		Deg.	Deg.	Deg.
1 B.C.	3101 K.Y.	254·7442	130·0274	40·0866
100 A.D.	3201	315·2712	130·0291	40·0848
200	3301	15·7982	130·0308	40·0830
300	3401	76·3252	130·0325	40·0813
400	3501	136·8522	130·0342	40·0795
500	3601	197·3793	130·0359	40·0777
600	3701	257·9063	130·0376	40·0759
700	3801	318·4333	130·0393	40·0741
800	3901	18·9603	130·0410	40·0723
900	4001	79·4873	130·0427	40·0706

A.D.	Kaliyuga.	Mean long. at commencement of Solar Year.	Longitude of apsis.	Longitude of node.
		Deg.	Deg.	Deg.
1000 A.D.	4101 K.Y.	140·0144	130·0444	40·0688
1100	4201	200·5414	130·0461	40·0670
1200	4301	261·0684	130·0478	40·0652
1300	4401	321·5954	130·0495	40·0634
1400	4501	22·1224	130·0512	40·0616
1500	4601	82·6495	130·0529	40·0599
1600	4701	143·1765	130·0546	40·0581
1700	4801	203·7035	130·0563	40·0563
1800	4901	264·2305	130·0580	40·0545
1900	5001	324·7575	130·0597	40·0527
2000	5101	25·2846	130·0614	40·0510

Mars' mean motion for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	191·40	11	305·46	21	59·51	31	173·56	41	287·62	51	41·67	61	155·72	71	269·77	81	23·83	91	137·88
2	22·81	12	136·86	22	250·92	32	4·97	42	119·02	52	233·07	62	347·13	72	101·18	82	215·23	92	329·29
3	214·22	13	328·27	23	82·32	33	196·37	43	310·43	53	64·48	63	178·53	73	292·58	83	46·64	93	160·69
4	45·62	14	159·67	24	273·73	34	27·77	44	141·83	54	255·88	64	9·94	74	123·99	84	238·04	94	352·09
5	237·03	15	351·08	25	105·13	35	219·84 18	45	333·24	55	87·29	65	201·34	75	315·39	85	69·45	95	183·50
6	68·43	16	182·48	26	296·54	36	50·59	46	164·64	56	278·69	66	32·75	76	146·80	86	260·85	96	14·91
7	257·84	17	13·89	27	127·94	37	241·99	47	356·05	57	110·10	67	224·15	77	338·21	87	92·26	97	206·31
8	91·24	18	205·29	28	319·35	38	73·40	48	187·45	58	301·51	68	55·56	78	169·61	88	283·66	98	37·72
9	282·65	19	36·70	29	150·75	39	264·80	49	18·86	59	132·91	69	246·96	79	1·02	89	115·07	99	229·12
10	114·05	20	228·10	30	342·16	40	96·21	50	210·26	60	324·32	70	78·37	80	192·42	90	306·47	100	60·53

Mars' Annual Eqn. in Deg.

	+	+		—
0	0·0	180·0	180·0	360·0
1	2·5	179·5	180·5	357·5
2	5·1	178·9	181·1	354·9
3	7·6	178·4	181·6	352·4
4	10·1	177·8	182·2	349·9
5	12·7	177·3	182·7	347·3
6	15·2	176·8	183·2	344·8
7	17·8	176·2	183·8	342·2
8	20·4	175·7	184·3	339·6
9	23·0	175·1	184·9	337·0
10	25·5	174·5	185·5	334·5
11	28·1	173·9	186·1	331·9
12	30·7	173·4	186·6	329·3
13	33·3	172·8	187·2	326·7
14	35·9	172·2	187·8	324·1
15	38·5	171·5	188·5	321·5
16	41·2	170·9	189·1	318·8
17	43·9	170·3	189·7	316·1
18	46·5	169·6	190·4	313·5
19	49·2	169·0	191·0	310·8
20	51·8	168·3	191·7	308·2
21	54·6	167·5	192·5	305·4
22	57·3	166·8	193·2	302·7
23	60·2	166·0	194·0	299·8
24	63·0	165·3	194·7	297·0
25	65·8	164·5	195·5	294·2
26	68·7	163·6	196·4	291·3
27	71·6	162·6	197·4	288·4
28	74·6	161·7	198·3	285·4
29	77·7	160·7	199·3	282·3
30	80·8	159·6	200·4	279·2
31	84·0	158·5	201·5	276·0
32	87·3	157·3	202·7	272·7
33	90·7	155·9	204·1	269·3
34	94·2	154·5	205·5	265·8
35	97·9	152·8	207·2	262·1
36	101·7	151·0	209·0	258·3
37	106·0	148·7	211·3	254·0
38	110·6	146·2	213·8	249·4
39	116·1	142·7	217·3	243·9
40	124·2	136·5	223·5	235·8
40·15	135·0	...	225·0	...

Mars' mean motion for Days.

Days.	0	1	2	3	4	5	6	7	8	9
		Degrees.				Degrees.			Degrees.	
0	...	0·52	1·05	1·57	2·10	2·62	3·14	3·67	4·19	4·72
1	5·24	5·76	6·29	6·81	7·33	7·86	8·38	8·91	9·43	9·96
2	10·48	11·00	11·52	12·05	12·58	13·10	13·62	14·15	14·67	15·19
3	15·72	16·24	16·77	17·29	17·82	18·34	18·86	19·39	19·91	20·44
4	20·96	21·48	22·01	22·53	23·06	23·58	24·11	24·63	25·15	25·68
5	26·20	26·73	27·25	27·77	28·30	28·82	29·35	29·87	30·39	30·92
6	31·44	31·97	32·49	33·01	33·54	34·07	34·59	35·11	35·63	36·16
7	36·68	37·21	37·73	38·25	38·78	39·30	39·83	40·35	40·87	41·40
8	41·92	42·45	42·97	43·49	44·02	44·54	45·07	45·59	46·11	46·64
9	47·16	47·69	48·21	48·73	49·26	49·78	50·31	50·83	51·35	51·88
10	52·40	52·93	53·45	53·97	54·50	55·02	55·55	56·07	56·59	57·12
11	57·64	58·17	58·70	59·22	59·74	60·26	60·79	61·31	61·84	62·36
12	62·88	63·41	63·93	64·46	64·98	65·50	66·03	66·55	67·08	67·60
13	68·12	68·65	69·17	69·70	70·22	70·74	71·27	71·79	72·32	72·84
14	73·36	73·89	74·41	74·94	75·46	75·98	76·51	77·03	77·56	78·08
15	78·60	79·13	79·65	80·18	80·70	81·22	81·75	82·27	82·80	83·32
16	83·84	84·37	84·89	85·42	85·94	86·46	86·99	87·51	88·04	88·56
17	89·09	89·61	90·13	90·66	91·88	91·71	92·23	92·75	93·28	93·80
18	94·33	94·85	95·37	95·90	96·42	95·95	97·47	97·99	98·52	99·04
19	99·57	100·09	100·61	101·14	101·66	102·19	102·71	103·23	103·76	104·28
20	104·81	105·33	105·85	106·38	106·90	107·43	107·95	108·47	109·00	109·52
21	110·05	110·57	111·09	111·62	112·14	112·67	113·19	113·71	114·24	114·77
22	115·29	115·81	116·33	116·86	117·38	117·91	118·43	118·96	119·46	120·00
23	120·53	121·05	121·58	122·10	122·62	123·15	123·67	124·20	124·72	125·25
24	125·77	126·29	126·82	127·34	127·86	128·39	128·91	129·44	129·96	130·48
25	131·01	131·53	132·06	132·55	133·10	133·63	134·15	134·68	135·20	135·72
26	136·25	136·77	137·30	137·82	138·34	138·87	139·39	139·92	140·44	140·96
27	141·49	142·01	142·54	143·06	143·58	144·11	144·63	145·16	145·68	146·20
28	146·73	147·25	147·78	148·30	148·82	149·35	149·87	150·40	150·92	151·45
29	151·97	152·49	153·02	153·54	154·07	154·59	155·11	155·64	156·16	156·69
30	157·21	157·73	158·26	158·78	159·31	159·83	160·35	160·88	161·40	161·93
31	162·45	162·97	163·50	164·02	164·55	165·07	165·59	166·12	166·64	167·17
32	167·69	168·21	168·74	169·26	169·79	170·31	170·83	171·36	171·88	172·41
33	172·93	173·45	173·98	174·50	175·03	175·55	176·07	176·60	177·12	177·65
34	178·17	178·69	179·22	179·74	180·27	180·79	181·31	181·84	182·36	182·89
35	183·41	183·94	184·46	184·98	185·51	186·03	186·56	187·08	187·60	188·13
36	188·65	189·18	189·70	190·22	190·75	191·27	...	...	...	...

TABLE XVII.—*contd.*

Mars' Anomaly.

+	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
					Degrees.					
0	0·0	0·5	0·9	1·4	1·9	2·4	2·9	3·4	3·9	4·4
1	4·8	5·3	5·8	6·3	6·7	7·2	7·7	8·2	8·7	9·2
2	9·7	10·2	10·7	11·2	11·7	12·2	12·7	13·2	13·7	14·2
3	14·7	15·2	15·7	16·2	16·7	17·3	17·8	18·3	18·8	19·4
4	19·9	20·4	20·9	21·4	22·0	22·5	23·0	23·6	24·1	24·7
5	25·2	25·7	26·3	26·9	27·4	28·0	28·6	29·1	29·7	30·2
6	30·8	31·4	32·0	32·6	33·2	33·7	34·4	35·0	35·6	36·2
7	36·9	37·5	38·1	38·7	39·4	40·1	40·7	41·4	42·1	42·7
8	43·4	44·1	44·8	45·5	46·3	47·0	47·7	48·5	49·2	50·0
9	50·8	51·6	52·4	53·2	54·2	55·0	55·9	56·8	57·7	58·7
10	59·7	60·7	61·8	62·9	64·0	65·2	66·5	67·7	69·2	70·6
11	72·2	74·1	76·1	78·4	81·2	85·7	...	...	...	...

—	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
					Degrees.					
0	180·0	180·5	180·9	181·4	181·9	182·4	182·9	183·4	183·9	184·4
1	184·8	185·3	185·8	186·3	186·7	187·2	187·7	188·2	188·7	189·2
2	189·7	190·2	190·7	191·2	191·7	192·2	192·7	193·2	193·7	194·2
3	194·7	195·2	195·7	196·2	196·7	197·3	197·8	198·3	198·8	199·4
4	199·9	200·4	200·9	201·4	202·0	202·5	203·0	203·6	204·1	204·7
5	205·2	205·7	206·3	206·9	207·4	208·0	208·6	209·1	209·7	210·2
6	210·8	211·4	212·0	212·6	213·2	213·7	214·4	215·0	215·6	216·2
7	216·9	217·5	218·1	218·7	219·4	220·1	220·7	221·4	222·1	222·7
8	223·4	224·1	224·8	225·5	226·3	227·9	227·7	229·5	229·2	230·0
9	230·8	231·6	232·4	233·2	234·2	235·0	235·9	236·8	237·7	238·7
10	239·7	240·7	241·8	242·9	244·0	245·2	246·5	247·7	249·2	250·6
11	252·2	254·1	256·1	258·4	261·2	265·7	...	...	...	...

Maximum Equation 11·53 for Anomaly of 90·00.

+	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
					Degrees.					
11	...	...	...	...	94·2	98·7	101·6	103·9	105·9	107·8
10	109·4	110·8	112·3	113·5	114·8	116·0	117·1	118·2	119·3	120·3
9	121·3	122·3	123·2	124·1	125·0	125·8	126·8	127·6	128·4	129·2
8	130·0	130·8	131·5	132·3	133·0	133·7	134·5	135·2	135·9	136·6
7	137·3	137·9	138·6	139·3	139·9	140·6	141·3	141·9	142·5	143·1
6	143·8	144·4	145·0	145·6	146·3	146·8	147·4	148·0	148·6	149·2
5	149·8	150·3	150·9	151·4	152·0	152·6	153·1	153·7	154·3	154·8
4	155·3	155·9	156·4	157·0	157·5	158·0	158·6	159·1	159·6	160·1
3	160·6	161·2	161·7	162·2	162·7	163·3	163·8	164·3	164·8	165·3
2	165·8	166·3	166·8	167·3	167·8	168·3	168·8	169·3	169·8	170·3
1	170·8	171·3	171·8	172·3	172·8	173·3	173·7	174·2	174·7	175·2
0	175·6	176·1	176·6	177·1	177·6	178·1	178·6	179·1	179·5	180·0

Maximum Equation 11·53 for Anomaly of 270·00.

—	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
					Degrees.					
11	...	...	...	...	274·2	278·7	281·6	283·9	285·9	287·8
10	289·4	290·8	292·3	293·5	294·8	296·0	297·1	298·2	299·3	300·3
9	301·3	302·3	303·2	304·1	305·0	305·8	306·8	307·6	308·4	309·2
8	310·0	310·8	311·5	312·3	313·0	313·7	314·5	315·2	315·9	316·6
7	317·3	317·9	318·6	319·3	319·9	320·6	321·3	321·9	322·5	323·1
6	323·8	324·4	325·0	325·6	326·3	326·8	327·4	328·0	328·6	329·2
5	329·8	330·3	330·9	331·4	332·0	332·6	333·1	333·7	334·3	334·8
4	335·3	335·9	336·4	337·0	337·5	338·0	338·6	339·1	339·6	340·1
3	340·6	341·2	341·7	342·2	342·7	343·3	343·8	344·3	344·8	345·3
2	345·8	346·3	346·8	347·3	347·8	348·3	348·8	349·3	349·8	350·3
1	350·8	351·3	351·8	352·3	352·8	353·3	353·7	354·2	354·7	355·2
0	355·6	356·1	356·6	357·1	357·6	358·1	358·6	359·1	359·5	360·0

MERCURY.

Data for calculating Latitude and geocentric Longitude of Mercury from B. C. 1 to A. D. 2000.

Mercury's mean motion for Centuries.

A.D.	Kaliyuga.	Mean Long. at commencement of Solar Year.	Longitude of apsis.	Longitude of node.
		Deg.	Deg.	Deg.
1 B.C.	3101 K.Y.	209·3843	220·4118	20·7580
100 A.D.	3201	285·4023	220·4149	20·7539
200	3301	1·4203	220·4180	20·7499
300	3401	77·4383	220·4210	20·7458
400	3501	153·4563	220·4241	20·7417
500	3601	229·4744	220·4272	20·7377
600	3701	305·4924	220·4302	20·7336
700	3801	21·5104	220·4333	20·7295
800	3901	97·5284	220·4363	20·7255
900	4001	173·5464	220·4394	20·7214
1000 A.D.	4101 K.Y.	249·5645	220·4425	20·7173
1100	4201	325·5825	220·4455	20·7133
1200	4301	41·6005	220·4486	20·7092
1300	4401	117·6185	220·4517	20·7051
1400	4501	193·6365	220·4547	20·7011
1500	4601	269·6546	220·4578	20·6970
1600	4701	345·6726	220·4609	20·6929
1700	4801	61·6906	220·4639	20·6889
1800	4901	137·7086	220·4670	20·6848
1900	5001	213·7266	220·4701	20·6807
2000	5101	289·7447	220·4731	20·6767

Mercury's mean motion for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	54·76	11	242·36	21	69·96	31	257·57	41	85·17	51	272·77	61	100·37	71	287·97	81	115·57	91	303·18
2	109·52	12	297·12	22	124·72	32	312·33	42	139·93	52	327·53	62	155·13	72	342·73	82	170·33	92	357·94
3	164·28	13	251·88	23	179·48	33	7·09	43	194·69	53	22·29	63	209·89	73	37·49	83	225·09	93	52·70
4	219·04	14	46·64	24	234·24	34	61·85	44	249·45	54	77·05	64	264·65	74	92·25	84	279·85	94	107·46
5	273·80	15	101·40	25	289·00	35	116·61	45	304·21	55	131·81	65	319·41	75	147·01	85	334·61	95	162·22
6	328·56	16	156·16	26	343·76	36	171·37	46	358·97	56	186·57	66	14·17	76	201·77	86	29·37	96	216·98
7	23·32	17	210·92	27	38·52	37	226·13	47	53·73	57	241·33	67	68·93	77	256·53	87	84·13	97	271·74
8	78·08	18	265·68	28	93·28	38	280·89	48	108·49	58	296·09	68	123·69	78	311·29	88	138·89	98	326·50
9	132·84	19	320·44	29	148·04	39	335·65	49	163·25	59	350·85	69	178·45	79	6·05	89	193·66	99	21·26
10	187·60	20	15·20	30	202·80	40	30·41	50	218·01	60	45·61	70	233·21	80	60·81	90	248·42	100	76·02

TABLE XVII.—*contd.*

Mercury's mean motion for Days.

Days.	0	1	2	3	4	5	6	7	8	9
	Degrees.									
0	...	4·09	8·18	12·28	16·37	20·46	24·55	28·65	32·74	36·83
1	40·92	45·02	49·11	53·20	57·29	61·38	65·48	69·57	73·66	77·75
2	81·87	85·94	90·03	94·12	98·22	102·31	106·40	110·49	114·59	118·68
3	122·77	126·86	130·95	135·05	139·14	143·23	147·32	151·42	155·51	159·60
4	163.69	167·79	171·88	175·97	180·06	184·15	188·25	192·34	196·43	200·52
5	204·62	208·71	212·80	216·89	220·99	225·08	229·17	233·26	237·36	241·45
6	245·54	249·63	253·72	257·82	261·91	266·00	270·09	274·19	278·28	282·37
7	286·46	290·56	294·65	298·74	302·83	306·92	311·02	315·11	319·20	323·29
8	327·39	331·48	335·57	339·66	343·76	347·85	351·94	356·03	0·13	4·22
9	8·31	12·40	16·49	20·59	24·68	28·77	32·86	36·96	41·05	45·14
10	49·23	53·33	57·42	61·51	65·60	69·69	73·79	77·88	81·97	86·06
11	90·16	94·25	98·34	102·43	106·53	118·62	114·71	118·80	122·90	126·99
12	131·08	135·17	139·26	143·36	147·45	151·54	155·63	159·73	163·82	167·91
13	172·00	176·10	180·19	184·28	188·37	192·47	196·56	200·65	204·74	208·83
14	212·93	217·02	221·11	225·20	229·30	233·39	237·48	247·57	245·67	249·76
15	253·85	257·94	262·03	266·13	270·22	274·31	278·40	282·50	286·59	290·68
16	294·77	298·87	302·96	307·05	311·14	315·24	319·33	323·42	327·51	331·60
17	335·70	339·79	343·88	347·97	352·07	356·16	0·25	4·34	8·44	12·53
18	16·62	20·71	24·80	28·90	32·99	37·08	41·17	45·27	49·36	53·45
19	57·54	61·64	65·73	69·82	73·91	78·01	82·10	86·19	90·28	94·37
20	98·47	102·56	106·65	110·74	114·84	118·93	123·02	127·11	131·21	135·30
21	139·39	143·48	147·58	151·67	155·76	159·85	163·94	168·04	172·98	176·22
22	180·31	184·41	188·50	192·59	196·68	200·78	204·87	208·96	213·05	217·15
23	221·24	225·33	228·42	233·51	237·61	241·70	245·80	249·88	253·98	258·07
24	262·16	266·25	270·35	274·44	278·53	282·62	286·71	290·80	294·90	298·99
25	303·08	307·18	311·27	315·36	319·45	323·55	327·64	331·73	335·82	339·92
26	344·01	348·10	352·19	356·28	0·38	4·47	8·56	12·65	16·75	20·84
27	24·93	29·02	33·12	37·21	41·30	45·39	49·49	53·58	57·67	61·76
28	65·85	69·95	74·04	78·13	82·22	86·32	90·41	94·50	98·59	102·69
29	106·78	110·87	114·96	119·05	123·15	127·24	131·33	135·42	139·52	143·61
30	147·70	151·79	155·89	159·98	164·07	168·16	172·26	176·35	180·44	184·53
31	188·62	192·72	196·81	200·90	204·99	209·09	213·18	217·27	221·36	225·46
32	229·55	233·64	237·73	241·82	245·92	250·00	254·10	258·19	262·29	266·38
33	270·47	274·56	278·66	282·75	286·84	290·93	295·03	299·12	303·21	307·30
34	311·39	315·49	319·58	323·67	327·76	331·86	335·95	340·04	344·13	348·23
35	352·32	356·41	0·50	4·60	8·69	12·78	16·87	20·96	25·06	29·15
36	33·24	37·33	41·43	45·52	49·61	53·70	...	...	...	...

Mercury's Annual Equation.

	+	—
	Degrees.	
0	0·0	360·0
1	3·7	356·3
2	7·4	352·6
3	11·2	348·8
4	14·9	345·1
5	18·7	341·3
6	22·5	337·5
7	26·4	333·6
8	30·2	329·8
9	34·7	325·3
10	38·2	321·8
11	42·3	317·7
12	46·5	313·5
13	50·7	309·3
14	55·2	304·8
15	59·8	300·2
16	64·6	295·4
17	69·8	290·2
18	75·4	284·6
19	81·6	278·4
20	88·7	271·3
21	98·6	261·4
21·5	112·2	247·8
	+	—
21	123·7	236·3
20	131·5	228·5
19	136·6	223·4
18	140·7	219·3
17	144·3	215·7
16	147·4	212·6
15	150·3	209·7
14	152·9	207·1
13	155·3	204·7
12	157·6	202·4
11	159·8	200·2
10	161·9	198·1
9	163·9	196·1
8	165·8	194·2
7	167·7	192·3
6	169·5	190·5
5	171·3	188·7
4	173·1	186·9
3	174·8	185·2
2	176·6	183·4
1	178·3	181·7
0	180·0	180·0

Mercury's Anomaly.

	+	+	—	—
	Degrees.			
0·0	0·0	180·0	180·0	360·0
0·1	1·2	178·8	181·2	358·8
0·2	2·4	177·6	182·4	357·6
0·3	3·6	176·4	183·6	356·4
0·4	4·9	175·1	184·9	355·1
0·5	6·0	174·0	186·0	354·0
0·6	7·2	172·8	187·2	352·8
0·7	8·5	171·5	188·5	351·5
0·8	9·7	170·3	189·7	350·3
0·9	11·0	169·0	191·0	349·0
1·0	12·2	167·8	192·2	347·8
1·1	13·5	166·5	193·5	346·5
1·2	14·7	165·3	194·7	345·3
1·3	16·1	163·9	196·1	343·9
1·4	17·4	162·6	197·4	342·6
1·5	18·7	161·3	198·7	341·3
1·6	20·1	159·9	200·1	339·9
1·7	21·5	158·5	201·5	338·5
1·8	22·7	157·3	202·7	337·3
1·9	24·2	155·8	204·2	335·8
2·0	25·6	154·4	205·6	334·4
2·1	27·0	153·0	207·0	333·0
2·2	28·5	151·5	208·5	331·5
2·3	29·9	150·1	209·9	330·1
2·4	31·4	148·6	211·4	328·6
2·5	33·0	147·0	213·0	327·0
2·6	34·5	145·5	214·5	325·5
2·7	36·0	144·0	216·0	324·0
2·8	37·7	142·3	217·7	322·3
2·9	39·4	140·6	219·4	320·6
3·0	41·2	138·8	221·2	318·8
3·1	42·9	137·1	222·9	317·1
3·2	44·7	135·3	224·7	315·3
3·3	46·6	133·4	226·6	313·4
3·4	48·5	131·5	228·5	311·5
3·5	50·6	129·4	230·6	309·4
3·6	52·7	127·3	232·7	307·3
3·7	55·0	125·0	235·0	305·0
3·8	57·5	122·5	237·5	302·5
3·9	60·0	120·0	240·0	300·0
4·0	63·0	117·0	243·0	297·0
4·1	66·0	114·0	246·0	294·0
4·2	69·7	110·2	249·7	290·2
4·3	74·0	106·0	254·0	286·0
4·4	80·5	99·5	260·5	279·5
4·5	90·0	90·0	270·0	270·0

JUPITER.

Data for calculating Latitude and geocentric Longitude of Jupiter from B.C. 1 to A.D. 2000.

Jupiter's mean motion for Centuries.

A.D.	Kaliyuga.	Mean long. at commencement of Solar Year.	Longitude of apsis.	Longitude of node.
		Deg.	Deg.	Deg.
1 B.C.	3101 K.Y.	163·1655	171·2250	79·6967
100 A.D.	3201	317·9101	171·2325	79·6952
200	3301	112·6547	171·2400	79·6938
300	3401	267·3993	171·2475	79·6923
400	3501	62·1439	171·2550	79·6909
500	3601	216·8885	171·2625	79·6894
600	3701	11·6331	171·2700	79·6880
700	3801	166·3778	171·2776	79·6865
800	3901	321·1225	171·2851	79·6851
900	4001	115·8671	171·2926	79·6836
1000 A.D.	4101 K.Y.	270·6117	171·3001	79·6822
1100	4201	65·3563	171·3076	79·6807
1200	4301	220·1009	171·3151	79·6793
1300	4401	14·8455	171·3226	79·6778
1400	4501	169·5901	171·3301	79·6764
1500	4601	324·3347	171·3376	79·6749
1600	4701	119·0793	171·3451	79·6735
1700	4801	273·8239	171·3526	79·6720
1800	4901	68·5665	171·3601	79·6706
1900	5001	223·3130	171·3676	79·6691
2000				

TABLE XVII.—*contd.*

Jupiter's mean motion for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	30·35	**11**	333·82	**21**	277·30	**31**	220·77	**41**	164·24	**51**	107·72	**61**	51·19	**71**	354·67	**81**	298·14	**91**	241·62
2	60·69	**12**	4·17	**22**	307·64	**32**	251·12	**42**	194·59	**52**	138·07	**62**	81·54	**72**	25·02	**82**	328·49	**92**	271·96
3	91·04	**13**	34·52	**23**	337·99	**33**	281·46	**43**	224·94	**53**	168·41	**63**	111·89	**73**	55·36	**83**	358·84	**93**	302·31
4	121·39	**14**	64·86	**24**	8·34	**34**	311·81	**44**	255·29	**54**	198·76	**64**	142·24	**74**	85·71	**84**	29·18	**94**	332·66
5	151·74	**15**	95·21	**25**	38·69	**35**	342·16	**45**	285·63	**55**	229·11	**65**	172·58	**75**	116·06	**85**	59·53	**95**	3·01
6	182·08	**16**	125·56	**26**	69·03	**36**	12·51	**46**	315·98	**56**	259·46	**66**	202·93	**76**	146·41	**86**	89·88	**96**	33·35
7	212·43	**17**	155·91	**27**	99·38	**37**	42·85	**47**	346·33	**57**	289·80	**67**	233·28	**77**	176·75	**87**	120·23	**97**	63·70
8	242·78	**18**	186·25	**28**	129·73	**38**	73·20	**48**	16·68	**58**	320·15	**68**	263·63	**78**	207·10	**88**	150·57	**98**	94·05
9	273·13	**19**	216·60	**29**	160·07	**39**	103·55	**49**	47·02	**59**	350·50	**69**	293·97	**79**	237·45	**89**	180·92	**99**	124·40
10	303·47	**20**	246·95	**30**	190·42	**40**	133·90	**50**	77·37	**60**	20·85	**70**	324·32	**80**	267·80	**90**	211·27	**100**	154·74

Jupiter's mean motion for Days.

Degrees.

Days.	0	1	2	3	4	5	6	7	8	9
0	...	0·80	0·17	0·25	0·33	0·41	0·50	0·58	0·66	0·75
1	0·83	0·91	1·00	1·08	1·16	1·25	1·33	1·41	1·50	1·58
2	1·66	1·74	1·83	1·91	1·99	2·07	2·16	2·24	2·33	2·41
3	2·49	2·58	2·66	2·74	2·82	2·91	2·99	3·07	3·16	3·24
4	3·32	3·41	3·49	3·57	3·66	3·74	3·82	3·90	3·99	4·07
5	4·15	4·24	4·32	4·40	4·49	4·57	4·65	4·74	4·82	4·90
6	4·99	5·07	5·15	5.23	5·32	5·40	5·48	5·57	5·65	5·73
7	5·82	5·90	5·98	6·07	6·15	6·23	6·31	6·40	6·48	6·56
8	6·65	6·73	6·81	6·90	6·98	7·06	7·15	7·23	7·31	7·39
9	7·48	7·56	7·64	7·73	7·81	7·89	7·98	8·06	8·14	8·23
10	8·31	8·39	8·47	8·56	8·64	8·72	8·81	8·89	8·97	9·06
11	9·14	9·22	9·31	9·39	9·47	9·55	9·64	9·72	9·80	9·89
12	9·97	10·05	10·14	10·22	10·30	10·39	10·47	10·55	10·64	10·72
13	10·8(	10·88	10·97	11·05	11·13	11·22	11·30	11·38	11·47	11·55
14	11·63	11·72	11·80	11·88	11·96	12·05	12·13	12·21	12·30	12·38
15	12·46	12·55	12 63	12·71	12·80	12·88	12·96	13·04	13·13	13·21
16	13·29	13·38	13·46	13·54	13·63	13·71	13·79	13·88	13·96	14·04
17	14·13	14·21	14·29	14·37	14·46	14·54	14·62	14·71	14·79	14·87
18	14·96	15·04	15·12	15·21	15·29	15·37	15·45	15·54	15·62	15·70
19	15·79	15·87	15·95	16·04	16·12	16·20	16·29	16·37	16·45	16·53
20	16·62	16·70	16·78	16·87	16·95	17·03	17·12	17·20	17·28	17·37
21	17·45	17·53	17·61	17·70	17·78	17·86	17·95	18·03	18·11	18·20
22	18·28	18·36	18·45	18·53	18·61	18·70	18·78	18·86	18·94	19·03
23	19·11	19·19	19·28	19·36	19·44	19·53	19·61	19·69	19·78	19·86
24	19·94	20·02	20·11	20·19	20·27	20·36	20·44	20·52	20·61	20·69
25	20·77	20·86	20·94	21·02	21·11	21·19	21·27	21·35	21·44	21·52
26	21·60	21·69	21·77	21·85	21·94	22·02	22·10	22·18	22·27	22·35
27	22·43	22·52	22·60	22·68	22·77	22·85	22·93	23·02	23·10	23·18
28	23·27	23·35	23·43	23·51	23·60	23·68	23·76	23·85	23·93	24·01
29	24·10	24·18	24·26	24·35	24·43	24·51	24·59	24·68	24·76	24·84
30	24·93	25·01	25·09	25·18	25·26	25·34	25·43	25·51	25·59	25·67
31	25·76	25·84	25·92	26·01	26·09	26·17	26·26	26·34	26·42	26·51
32	26·59	26·67	26·75	26·84	26·92	27·00	27·09	27·17	27·25	27·34
33	27·42	27·50	27·59	27·67	27·75	27·84	27·92	28·00	28·08	28·17
34	28·25	28·33	28·42	28·50	28·58	28·67	28·75	28·83	28·92	29·00
35	29·08	29·16	29·25	29·33	29·41	29·50	29·58	29·66	29·75	29·83
36	29·91	30·00	30·08	30·16	30·24	30·33	...	...	...	...

Jupiter's Annual Equation.

Degrees.

+	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	0·0	0·6	1·2	1·8	2·4	3·1	3·7	4·3	4·9	5·5
1	6·1	6·7	7·4	8·0	8·6	9·2	9·8	10·4	11·1	11·7
2	12·2	12·9	13·5	14·1	14·7	15·4	16·0	16·6	17·2	17·9
3	18·5	19·1	19·7	20·4	21·0	21·6	22·2	22·9	23·5	24·2
4	24·8	25·4	26·1	26·7	27·4	28·0	28·6	29·2	29·9	30·6
5	31·2	31·9	32·6	33·2	33·9	34·5	35·2	35·9	36·6	37·2
6	37·9	38·6	39·3	40·0	40·7	41·4	42·0	42·8	43·5	44·2
7	44·9	45·7	46·4	47·2	47·9	48·6	49·4	50·2	50·9	51·7
8	52·4	53·2	54·0	54·8	55·7	56·4	57·3	58·2	59·0	59·8
9	60·7	61·6	62·5	63·4	64·4	65·3	66·3	67·2	68·3	69·4
10	70·4	71·5	72·7	73·9	75·0	76·4	77·6	79·0	80·5	82·0
11	83·7	85·5	87·3	90·0	93·0	97·5	...	...	...	...

Degrees.

—	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	180·0	180·4	180·8	181·3	181·7	182·1	182·5	182·9	183·3	183·7
1	184·1	184·5	185·0	185·4	185·8	186·2	186·6	187·0	187·5	187·9
2	188·3	188·7	189·1	189·6	190·0	190·4	190·8	191·3	191·7	192·1
3	192·5	193·0	193·4	193·8	194·3	194·7	195·1	195·5	196·0	196·4
4	196·9	197·3	197·8	198·2	198·6	199·1	199·6	200·0	200·5	200·9
5	201·4	201·8	202·3	202·8	203·2	203·7	204·2	204·7	205·2	205·6
6	206·1	206·6	207·1	207·6	208·1	208·6	209·1	209·6	210·1	210·7
7	211·2	211·7	212·3	212·8	213·4	213·9	214·5	215·1	215·6	216·2
8	216·8	217·4	217·9	218·6	219·2	219·8	220·4	221·1	221·8	222·4
9	223·2	223·8	224·6	225·3	226·0	226·8	227·6	228·3	229·2	229·9
10	230·9	231·8	232·8	233·8	234·8	236·0	237·0	238·1	239·4	240·8
11	242·3	243·8	245·8	247·8	250·5	255·0	...	...	...	...

Maximum Equation 11·54 for Anomaly of 103·00.

Degrees.

+	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
11	...	...	...	...	105·0	109·5	112·2	114·2	116·2	117·7
10	119·2	120·6	121·9	123·0	124·0	125·2	126·2	127·2	128·2	129·1
9	130·1	130·8	131·7	132·4	133·2	134·0	134·7	135·4	136·2	136·8
8	137·6	138·2	138·9	139·6	140·2	140·8	141·4	142·1	142·6	143·2
7	143·8	144·4	144·9	145·5	146·1	146·6	147·2	147·7	148·3	148·8
6	149·3	149·9	150·4	150·9	151·4	151·9	152·4	152·9	153·4	153·9
5	154·4	154·8	155·3	155·8	156·3	156·8	157·2	157·7	158·2	158·6
4	159·1	159·5	160·0	160·4	160·9	161·4	161·8	162·2	162·7	163·1
3	163·6	164·0	164·5	164·9	165·3	165·7	166·2	166·6	167·0	167·5
2	167·9	168·3	168·7	169·2	169·6	170·0	170·4	170·9	171·3	171·7
1	172·1	172·5	173·0	173·4	173·8	174·2	174·6	175·0	175·5	175·9
0	176·3	176·7	177·1	177·5	177·9	178·3	178·7	179·2	179·6	180·0

Maximum Equation 11·54 for Anomaly of 257·00

Degrees.

—	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
11	...	...	...	...	262·5	267·0	270·0	272·5	274·5	276·3
10	278·0	279·5	281·0	282·4	283·6	285·0	286·4	287·3	288·5	289·6
9	290·6	291·7	292·8	293·7	294·7	295·6	296·6	297·5	298·4	299·3
8	300·2	301·0	301·8	302·7	303·6	304·3	305·2	306·0	306·8	307·6
7	308·3	309·1	309·8	310·6	311·4	312·1	312·8	313·6	314·3	315·1
6	315·8	316·5	317·2	318·0	318·6	319·3	320·0	320·7	321·4	322·1
5	322·8	323·4	324·1	324·8	325·5	326·1	326·8	327·4	328·1	328·8
4	329·4	330·1	330·8	331·4	332·0	332·6	333·3	333·9	334·6	335·2
3	335·8	336·5	337·1	337·8	338·4	339·0	339·6	340·3	340·9	341·5
2	342·1	342·8	343·4	344·0	344·6	345·3	345·9	346·5	347·1	347·8
1	348·3	348·9	349·6	350·2	350·8	351·4	352·0	352·6	353·3	353·9
0	354·5	355·1	355·7	356·3	356·9	357·6	358·2	358·8	359·4	360·0

TABLE XVII.—*contd.*

Jupiter's Anomaly.

+	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
					Degrees.					
0	0·0	1·1	2·2	3·2	4·4	5·5	6·6	7·7	8·8	9·9
1	11·0	12·2	13·3	14·5	15·6	16·7	17·9	19·1	20·2	21·5
2	22·6	23·9	25·1	26·4	27·6	28·9	30·2	31·5	32·9	34·1
3	35·5	37·0	38·4	39·9	41·4	42·9	44·5	46·1	47·7	49·5
4	51·2	53·1	55·0	57·1	59·2	61·7	64·0	67·0	70·0	74·0
5	77·5	90·0	...	...	...	...	...	...	...	...

Maximum Equation 5·0994 for Anomaly of 90·00

+	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
					Degrees.					
5	...	...	...	...	...	...	...	...	90·0	102·5
4	106·0	110·0	113·0	116·0	118·3	120·8	122·9	125·0	126·9	128·8
3	130·5	132·3	133·9	135·5	137·1	138·6	140·1	141·6	143·0	144·5
2	145·9	147·1	148·5	149·8	151·1	152·4	153·6	154·9	156·1	157·4
1	158·5	159·8	160·9	162·1	163·3	164·4	165·5	166·7	167·8	169·0
0	170·1	171·2	172·3	173·4	174·5	175·6	176·8	177·8	178·9	180·0

—	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
					Degrees.					
0	180·0	181·1	182·2	183·2	184·4	185·5	186·6	187·7	188·3	189·9
1	191·0	192·2	193·3	194·5	195·6	196·7	197·9	199·0	200·2	201·5
2	202·6	203·9	205·1	206·4	207·6	208·9	210·2	211·5	212·9	214·1
3	215·5	217·0	218·4	219·9	221·4	222·9	224·5	226·1	227·7	229·5
4	231·2	233·1	235·0	237·1	239·2	241·7	244·0	247·0	250·2	254·0
5	257·5	270·0	...	...	...	...	...	...	...	...

Maximum Equation 5·0994 for Anomaly of 270·00.

—	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
					Degrees.					
5	...	...	...	...	...	...	...	...	270·0	282·5
4	286·0	290·0	293·0	296·0	298·3	300·8	302·9	305·0	306·9	308·8
3	310·5	312·3	313·9	315·5	317·1	318·6	320·1	321·6	323·0	324·5
2	325·9	327·1	328·5	329·8	331·1	332·4	333·6	334·9	336·1	337·1
1	338·5	339·8	340·9	342·1	343·3	344·4	345·5	346·7	347·8	349·0
0	350·1	351·2	352·3	353·4	354·5	355·6	356·8	357·8	358·9	360·0

VENUS.

Data for calculating Latitude and geocentric Longitude of Venus from B.C. 1 to A.D. 2000.

Venus' mean motion for Centuries.

A.D.	Kaliyuga.	Mean long. at commencement of Solar Year.	Longitude of apsis.	Longitude of node.
		Deg.	Deg.	Deg.
1 B.C.	3101 K.Y.	303·2772	79·7837	59·8039
100 A.D.	3201	142·2624	79·7882	59·7964
200	3301	341·2475	79·7926	59·7889
300	3401	180·2327	79·7971	59·7814
400	3501	19·2178	79·8016	59·7738
500	3601	218·2030	79·8060	59·7663
600	3701	57·1882	79·8105	59·7588
700	3801	256·1733	79·8149	59·7513
800	3901	95·1585	79·8194	59·7438
900	4001	294·1436	79·8238	59·7363
1000 A.D.	4101 K.Y.	133·1288	79·8283	59·7288
1100	4201	332·1140	79·8328	59·7213
1200	4301	171·0991	79·8372	59·7138
1300	4401	10·0843	79·8417	59·7063
1400	4501	209·0694	79·8461	59·6988
1500	4601	48·0546	79·8506	59·6913
1600	4701	247·0398	79·8550	59·6838
1700	4801	86·0249	79·8595	59·6763
1800	4901	285·0101	79·8639	59·6687
1900	5001	123·9952	79·8684	59·6612
2000	5101	322·9804	79·8729	59·6537

Venus' mean motion for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	225·19	11	317·09	21	48·99	31	140·88	41	232·78	51	324·68	61	56·58	71	148·48	81	240·38	91	332·28
2	90·38	12	182·28	22	274·18	32	6·07	42	97·97	52	189·87	62	281·77	72	13·67	82	105·57	92	197·47
3	315·57	13	47·47	23	139·37	33	231·26	43	323·16	53	55·06	63	146·96	73	238·86	83	330·76	93	62·66
4	180·76	14	272·66	24	4·56	34	96·45	44	188·35	54	280·25	64	12·15	74	104·05	84	195·95	94	287·85
5	45·95	15	137·85	25	229·75	35	321·64	45	53·54	55	145·44	65	237·34	75	329·24	85	61·14	95	153·04
6	271·14	16	3·04	26	94·94	36	186·83	46	278·73	56	10·63	66	102·53	76	194·43	86	286·33	96	18·23
7	136·33	17	228·23	27	320·13	37	52·02	47	143·92	57	235·82	67	327·72	77	59·62	87	151·52	97	243·42
8	1·52	18	93·42	28	185·32	38	277·21	48	9·11	58	101·01	68	192·91	78	284·81	88	16·71	98	108·60
9	226·71	19	318·61	29	50·51	39	142·40	49	234·30	59	326·20	69	58·10	79	150·00	89	241·90	99	333·79
10	91·90	20	183·80	30	275·70	40	7·59	50	99·49	60	191·39	70	283·29	80	15·19	90	107·09	100	198·98

TABLE XVII.—*contd.*

Venus' mean motion for Days.

Degrees.

Days.	0	1	2	3	4	5	6	7	8	9
0	...	1·60	3·20	4·81	6·41	8·01	9·61	11·21	12·82	14·42
1	16·02	17·62	19·23	20·83	22·43	24·03	25·63	27·24	28·84	30·44
2	32·04	33·64	35·25	36·65	38·45	40·05	41·65	43·26	44·86	46·46
3	48·06	49·67	51·27	52·87	54·47	56·07	57·68	59·28	60·88	62·48
4	64·08	65·68	67·29	68·89	70·49	72·09	73·70	75·30	76.90	78·50
5	80·11	81·71	83·31	84·91	86·51	88·12	89·72	91·32	92·32	94·53
6	96·13	97·73	99·33	100·93	102·54	104·14	105·74	107·34	108·94	110·55
7	112·15	113·75	115·35	116·95	118·56	120·16	121·76	123·36	124·97	126·57
8	128·70	129·77	131·37	132·98	134·58	136·18	137·78	139·38	140·99	142·59
9	144·19	145·79	147·40	149·00	150·60	152·20	153·80	155·41	157·01	158·61
10	160·21	161·81	163·42	165·02	166·62	168·22	169·83	171·43	173·03	174·63
11	176·23	177·84	179·44	181·04	182·64	182·24	185·85	187·45	189·05	190·65
12	192·25	193·86	195·46	197·06	198·66	200·27	201·87	203·47	205·07	206·67
13	208·28	209·88	211·48	213·08	214·69	216·29	217·89	219·49	221·09	222·70
14	224·30	225·90	227·50	229·10	230·71	232·31	233·91	235·51	237·11	238·72
15	240·32	241·92	243·52	245·13	246·73	248·33	249·93	251·53	253·14	254·74
16	256·34	257·94	259·54	261·15	262·75	264·35	265·95	267·56	269·16	270·76
17	272·56	273·96	275·57	277·17	278·77	280·37	281·97	283·58	285·18	286·78
18	288·38	289·98	291·59	293·19	294·79	296·39	297·99	299·60	301·20	302·80
19	304·40	306·01	307·61	309·21	310·81	312·41	314·02	315·62	317·22	318·82
20	320·43	322·03	323·63	325·23	326·83	328·44	330·04	331·64	333·24	334·84
21	336·45	338·05	339·65	341·25	342·86	344·46	346·06	347·66	349·26	350·87
22	352·47	354·07	355·67	357·27	358·88	0·48	2·08	3·68	5·29	6·89
23	8·49	10·09	11·69	13·30	14·90	16·50	18·10	19·70	21·31	22·91
24	24·51	26·11	27·72	29·32	30·92	32·52	34·12	35·73	37·33	38·93
25	40·53	42·13	43·74	45·34	46·94	48·54	50·15	51·75	53·35	54·95
26	56·55	58·16	59·76	61·36	62·96	64·56	66·17	67·77	69·37	70·97
27	72·57	74·17	75·78	77·38	78·98	80·59	82·19	83·79	85·39	86·99
28	88·60	90·20	91·80	93·40	95·00	96·61	98·21	99·81	101·41	103·02
29	104·62	106·22	107·82	109·42	111·03	112·63	114·23	115·83	117·43	119·04
30	120·64	122·24	123·84	125·45	127·05	128·65	130·25	131·85	133·46	135·06
31	136·66	138·26	139·86	141·47	143·07	144·67	146·27	147·87	149·48	151·08
32	152·68	154·28	155·89	157·49	159·09	160·69	162·29	163·90	165·50	167·10
33	168·70	170·30	171·91	173·51	175·11	176·71	178·32	179·92	181·52	183·12
34	184·72	186·33	187·93	189·53	191·13	192·73	194·34	195·94	197·54	199·14
35	200·75	202·35	203·95	205·55	207·15	208·76	210·36	211·96	213·56	215·16
36	216·77	218·37	219·97	221·57	223·18	224·78	...	...	...	...

Venus' Annual Equation.

	+	+	—	—
	Degrees.			
0	0·0	180·0	180·0	360·0
1	2·4	179·6	180·4	357·6
2	4·7	179·2	180·8	355·3
3	7·1	178·8	181·2	352·9
4	9·5	178·5	181·5	350·5
5	11·9	178·1	181·9	348·1
6	14·3	177·7	182·3	345·7
7	16·7	177·3	182·7	343·3
8	19·1	176·9	183·1	340·9
9	21·4	176·6	183·4	338·6
10	23·9	176·2	183·8	336·1
11	26·3	175·8	184·2	333·7
12	28·7	175·3	184·7	331·3
13	31·1	174·9	185·1	328·9
14	33·5	174·5	185·5	326·5
15	35·9	174·1	185·9	324·1
16	38·4	173·7	186·3	321·6
17	40·8	173·2	186·8	319·2
18	43·2	172·8	187·2	316·8
19	45·7	172·4	187·6	314·3
20	48·2	171·9	188·1	311·8
21	50·6	171·4	188·6	309·4
22	53·1	170·9	189·1	306·9
23	55·6	170·4	189·6	304·4
24	58·2	169·9	190·1	301·8
25	60·7	169·4	190·6	299·3
26	63·3	168·9	191·1	296·7
27	65·9	168·3	191·7	294·1
28	68·4	167·7	192·3	291·6
29	71·1	167·1	192·9	288·9
30	73·8	166·4	193·6	286·2
31	76·4	165·8	194·2	283·6
32	79·1	165·1	194·9	280·9
33	81·9	164·3	195·7	278·1
34	84·7	163·5	196·5	275·3
35	87·5	162·7	197·3	272·5
36	90·4	161·9	198·1	269·6
37	93·4	161·0	199·0	266·6
38	96·4	159·9	200·1	263·6
39	99·6	158·8	201·2	260·4
40	102·8	157·7	202·3	257·2
41	106·2	156·2	203·8	253·8
42	109·8	154·6	205·4	250·2
43	113·6	152·8	207·2	246·4
44	117·9	150·6	209·4	242·1
45	122·9	147·8	212·2	237·1
46	129·7	142·8	217·2	230·3
46·38	135·0	...	225·0	...

Venus' Anomaly.

	+	—
	Degrees.	
0·0	0·0	180·0
0·1	3·0	183·0
0·2	6·0	186·0
0·3	9·2	189·2
0·4	10·2	190·2
0·5	15·5	195·5
0·6	18·7	198·7
0·7	22·2	202·2
0·8	25·7	205·7
0·9	29·5	209·5
1·0	33·2	213·2
1·1	37·2	217·2
1·2	41·5	221·5
1·3	45·2	225·2
1·4	51·5	231·5
1·5	57·7	237·5
1·6	64·7	244·7
1·7	75·0	255·0
1·75	90·0	270·0
	+	—
1·7	105·0	285·0
1·6	115·3	295·3
1·5	122·3	302·2
1·4	128·5	308·5
1·3	134·8	314·8
1·2	138·5	318·5
1·1	142·8	322·8
1·0	146·8	326·8
0·9	150·5	330·5
0·8	154·3	334·3
0·7	157·8	337·8
0·6	161·3	341·3
0·5	164·5	344·5
0·4	169·8	349·8
0·3	170·8	350·8
0·2	174·0	354·0
0·1	177·0	357·0
0·0	180·0	360·0

SATURN.

Data for calculating Latitude and geocentric Longitude of Saturn from B.C. 1 to A.D. 2000.

Saturn's mean motion for Centuries.

A.D.	Kaliyuga.	Mean Long at commencement of Solar Year.	Longitude of apsis.	Longitude of node.
		Deg.	Deg	Deg.
1 B.C.	3101 K.Y.	70·5378	236·6194	100·4714
100 A.D.	3201	212·4447	236·6197	100·4659
200	3301	354·3517	236·6200	100·4604
300	3401	136·2586	236·6203	100·4548
400	3501	278·1655	236·6207	100·4493
500	3601	60·0725	236·6210	100·4438
600	3701	201·9794	236·6213	100·4383
700	3801	343·8864	236·6216	100·4328
800	3901	125·7933	236·6220	100·4272
900	4001	267·7002	236·6223	100·4217

A.D.	Kaliyuga	Mean Long. at commencement of Solar Year.	Longitude of aapsis.	Longitude of node.
		Deg.	Deg.	Deg.
1000 A.D.	4101 K.Y.	49·6072	236·6226	100·4162
1100	4201	191·5141	236·6229	100·4107
1200	4301	333·4211	236·6233	100·4052
1300	4401	115·3280	236·6236	100·3997
1400	4501	257·2349	236·6239	100·3941
1500	4601	39·1419	236·6242	100·3886
1600	4701	181·0488	236·6246	100·3831
1700	4801	322·9558	236·6249	100·3776
1800	4901	104·8627	236·6252	100·3721
1900	5001	246·7696	236·6255	100·3665
2000	5101	28·6766	236·6259	100·3610

TABLE XVII.—*contd.*

Saturn's mean motion for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	12·22	**11**	134·41	**21**	256·60	**31**	18·79	**41**	140·98	**51**	263·17	**61**	25·36	**71**	147·55	**81**	269·74	**91**	31·93
2	24·44	**12**	146·63	**22**	268·82	**32**	31·01	**42**	153·20	**52**	275·39	**62**	37·58	**72**	159·77	**82**	281·96	**92**	44·15
3	36·66	**13**	158·85	**23**	281·04	**33**	43·23	**43**	165·42	**53**	287·61	**63**	49·80	**73**	171·99	**83**	294·18	**93**	56·37
4	48·88	**14**	171·07	**24**	293·26	**34**	55·45	**44**	177·64	**54**	299·83	**64**	62·02	**74**	184·21	**84**	306·40	**94**	68·59
5	61·09	**15**	183·29	**25**	305·48	**35**	67·67	**45**	189·86	**55**	312·05	**65**	74·24	**75**	196·43	**85**	318·62	**95**	80·81
6	73·31	**16**	195·50	**26**	317·70	**36**	79·89	**46**	202·08	**56**	324·27	**66**	86·46	**76**	208·65	**86**	330·84	**96**	93·03
7	85·53	**17**	207·72	**27**	329·91	**37**	92·10	**47**	214·30	**57**	336·49	**67**	98·68	**77**	220·87	**87**	343·06	**97**	105·25
8	97·75	**18**	219·94	**28**	342·13	**38**	104·32	**48**	226·51	**58**	348·71	**68**	110·90	**78**	233·09	**88**	355·28	**98**	117·47
9	109·97	**19**	232·16	**29**	354·35	**39**	116·54	**49**	238·73	**59**	0·92	**69**	123·12	**79**	245·31	**89**	7·50	**99**	129·69
10	122·19	**20**	244·38	**30**	6·57	**40**	128·76	**50**	250·95	**60**	13·14	**70**	135·33	**80**	257·52	**90**	19·72	**100**	141·91

Saturn's mean motion for Days.

Degrees.

Days.	0	1	2	3	4	5	6	7	8	9
0	...	0·03	0·07	0·10	0·13	0·17	0·20	0·23	0·27	0·30
1	0·33	0·37	0·40	0·43	0·47	0·50	0·53	0·57	0·60	0·64
2	0·67	0·70	0·74	0·77	0·80	0·84	0·87	0·90	0·94	0·97
3	1·00	1·04	1·07	1·10	1·14	1·17	1·20	1·24	1·27	1·30
4	1·34	1·37	1·40	1·44	1·47	1·51	1·54	1·57	1·61	1·64
5	1·67	1·71	1·74	1·77	1·81	1·84	1·87	1·91	1·94	1·97
6	2·01	2·04	2·07	2·11	2·14	2·17	2·21	2·24	2·27	2·31
7	2·34	2·38	2·41	2·44	2·48	2·51	2·54	2·58	2·61	2·64
8	2·68	2·71	2·74	2·78	2·81	2·84	2·88	2·91	2·94	2·98
9	3·01	3·04	3·08	3·11	3·14	3·18	3·21	3·25	3·28	3·31
10	3·35	3·38	3·41	3·45	3·48	3·51	3·55	3·58	3·61	3·65
11	3·68	3·71	3·75	3·78	3·81	3·85	3·88	3·91	3·95	3·98
12	4·01	4·05	4·08	4·12	4·15	4·18	4·22	4·25	4·28	4·32
13	4·35	4·38	4·42	4·45	4·48	4·52	4·55	4·58	4·62	4·65
14	4·68	4·72	4·75	4·78	4·82	4·85	4·88	4·92	4·95	4·99
15	5·02	5·05	5·09	5·12	5·15	5·19	5·22	5·25	5·29	5·32
16	5·35	5·39	5·42	5·45	5·49	5·52	5·55	5·59	5·62	5·65
17	5·69	5·72	5·75	5·79	5·82	5·85	5·89	5·92	5·96	5·99
18	6·02	6·06	6·09	6·12	6·16	6·19	6·22	6·26	6·29	6·32

Degrees.

Days.	0	1	2	3	4	5	6	7	8	9
19	6·36	6·39	6·42	6·46	6·49	6·52	6·56	6·59	6·62	6·66
20	6·69	6·72	6·76	6·79	6·83	6·86	6·89	6·93	6·96	6·99
21	7·03	7·06	7·09	7·13	7·16	7·19	7·23	7·26	7·29	7·33
22	7·36	7·39	7·43	7·46	7·49	7·53	7·56	7·59	7·63	7·36
23	7·70	7·73	7·76	7·80	7·93	7·86	7·90	7·93	7·96	8·00
24	8·03	8·06	8·10	8·13	8·16	8·20	8·23	8·26	8·29	8·33
25	8·36	8·40	8·43	8·46	8·50	8·53	8·57	8·60	8·63	8·67
26	8·70	8·73	8·77	8·80	8·83	8·87	8·90	8·93	8·97	9·00
27	9·03	9·07	9·10	9·13	9·17	9·20	9·23	9·27	9·30	9·33
28	9·37	9·40	9·43	9·47	9·50	9·54	9·57	9·60	9·64	9·67
29	9·70	9·74	9·77	9·80	9·84	9·87	9·90	9·94	9·97	10·00
30	10·04	10·07	10·10	10·14	10·17	10·20	10·24	10·27	10·31	10·34
31	10·37	10·41	10·44	10·47	10·51	10·54	10·57	10·61	10·64	10·67
32	10·71	10·74	10·77	10·81	10·84	10·87	10·91	10·94	10·97	11·01
33	11·04	11·07	11·11	11·14	11·18	11·21	11·24	11·28	11·31	11·34
34	11·38	11·41	11·44	11·48	11·51	11·54	11·58	11·61	11·64	11·68
35	11·71	11·74	11·78	11·81	11·84	11·88	11·91	11·94	11·98	12·01
36	12·05	12·08	12·11	12·15	12·18	12·21	...	...	...	...

Saturn's Annual Equation.

Degrees.

+	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	0·0	1·0	2·0	3·1	4·1	5·1	6·1	7·1	8·2	9·2
1	10·2	11·2	12·2	13·3	14·4	15·4	16·4	17·5	18·5	19·6
2	20·6	21·7	22·7	23·8	24·9	26·0	27·1	28·2	29·2	30·4
3	31·5	32·6	33·7	34·9	36·1	37·2	38·4	39·6	40·8	42·0
4	43·2	44·5	45·8	47·1	48·5	49·7	51·1	52·5	54·0	55·5
5	57·0	58·5	60·1	61·7	63·5	65·4	67·2	69·2	71·5	73·7
6	76·2	79·3	82·7	87·5	97·5	...	...	...	...	...

Degrees.

—	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	180·0	180·8	181·7	182·5	183·3	184·1	184·9	185·8	186·6	187·4
1	188·3	189·1	189·9	190·8	191·6	192·4	193·3	194·1	194·9	195·8
2	196·7	197·5	198·4	199·4	200·8	201·1	201·9	202·8	203·8	204·7
3	205·6	206·5	207·5	208·4	209·4	210·3	211·3	212·3	213·3	214·4
4	215·4	216·5	217·5	218·7	219·8	221·0	222·1	223·4	224·6	225·9
5	227·3	228·5	229·8	231·3	233·0	234·6	236·3	238·3	240·0	242·3
6	244·3	247·3	250·8	255·0	262·5	...	...	...	...	...

Maximum Equation 6·3767 for Anomaly of 97·50.

Degrees.

+	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
6	...	...	...	...	...	97·5	105·0	109·2	112·7	115·7
5	117·7	120·0	121·7	123·7	125·4	127·0	128·7	130·2	131·5	132·7
4	134·1	135·4	136·6	137·9	139·0	140·2	141·3	142·5	143·5	144·6
3	145·6	146·7	147·7	148·7	149·7	150·6	151·6	152·5	153·5	154·4
2	155·3	156·2	157·2	158·1	158·9	159·2	160·7	161·6	162·5	163·3
1	164·2	165·1	165·9	166·7	167·6	168·4	169·2	170·1	170·9	171·7
0	172·6	173·4	174·2	175·1	175·9	176·7	177·5	178·3	179·2	180·0

Maximum Equation 6·3767 for Anomaly of 262·50.

Degrees.

—	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
6	...	...	...	...	...	262·5	272·5	277·3	280·8	283·8
5	286·3	288·5	290·8	292·8	294·6	296·5	298·3	299·9	301·5	303·0
4	304·5	306·0	307·5	308·9	310·3	311·5	312·9	314·1	315·5	316·8
3	318·0	319·2	320·4	321·6	322·8	323.9	325·1	326·3	327·4	328·5
2	329·6	330·3	331·8	332·9	334·0	335·1	336·2	337·3	338·3	339·4
1	340·4	341·5	342·5	343·6	344·6	345·6	346·7	347·8	348·8	349·8
0	350·8	351·8	352·9	353·9	354·9	355·9	356·9	358·0	359·0	360·0

Saturn's Anomaly.

Degrees.

+	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	0·0	0·7	1·5	2·2	2·9	3·7	4·4	5·2	5·9	6·7
1	7·4	8·1	8·9	9·6	10·4	11·2	11·9	12·7	13·4	14·2
2	14·9	15·7	16·5	17·2	18·1	18·8	19·6	20·4	21·2	22·0
3	22·8	23·7	24·5	25·3	26·1	26·9	27·8	28·7	29·5	30·3
4	31·2	32·1	33·0	33·9	34·8	35·7	36·7	37·6	38·5	39·5
5	40·5	41·5	42·5	43·5	44·6	45·6	46·7	47·9	49·0	50·1
6	51·4	52·5	53·9	55·1	56·5	57·9	59·2	60·9	62·5	64·1
7	66·0	67·7	70·0	72·2	75·0	78·2	83·0	90·0		

Degrees.

—	·0	·1	·2	·3	·4	·5	·6	·7	·8	·9
0	180·0	180·7	181·5	182·2	182·9	183·7	184·4	185·2	185·9	186·7
1	187·4	188·1	188·9	189·6	190·4	191·2	191·9	192·7	193·4	194·2
2	194·9	195·7	196·5	197·2	198·1	198·8	199·6	200·4	201·2	202·0
3	202·8	203·7	204·5	205·3	206·1	206·9	207·8	208·7	209·5	210·3
4	211·2	212·1	213·0	213·9	214·8	215·7	216·7	217·6	218·5	219·5
5	220·5	221·5	222·5	223·5	224·6	225·6	226·7	227·9	229·0	230·1
6	231·4	232·5	233·9	235·1	236·5	237·9	239·2	240·9	242·5	244·1
7	246·0	247·7	250·0	252·2	255·0	258·2	263·0	270·0	...	...

Maximum Equation 7·6586 for Anomaly of 90·00.

Degrees.

+	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
7	...	...	90·0	97·0	101·8	105·0	107·8	110·0	112·3	114·0
6	115·9	117·5	119·1	120·8	122·1	123·5	124·9	126·1	127·5	128·6
5	129·9	131·0	132·1	133·3	134·4	135·4	136·5	137·5	138·5	139·5
4	140·5	141·5	142·4	143·3	144·3	145·2	146·1	147·0	147·9	148·8
3	149·7	150·5	151·3	152·2	153·1	153·9	154·7	155·5	156·3	157·2
2	158·0	158·8	159·6	160·4	161·2	161·9	162·8	163·5	164·3	165·1
1	165·8	166·6	167·3	168·1	168·8	169·6	170·4	171·1	171·9	172·6
0	173·3	174·1	174·8	175·6	176·3	177·1	177·8	178·5	179·3	180·0

Maximum Equation 7·6586 for Anomaly of 270·00.

Degrees.

—	·9	·8	·7	·6	·5	·4	·3	·2	·1	·0
7	...	...	270·0	277·0	281·8	285·0	287·8	290·0	292·3	294·0
6	295·9	297·5	299·1	300·8	302·1	303·5	304·9	306·1	307·5	308·6
5	309·9	311·0	312·1	313·3	314·4	315·4	316·5	317·5	318·5	319·5
4	320·5	321·5	322·4	323·3	324·3	325·2	326·1	327·0	327·9	328·8
3	329·7	330·5	331·3	332·2	333·1	333·9	334·7	335·5	336·3	337·2
2	338·0	338·8	339·6	340·4	341·2	341·9	342·8	343·5	344·3	345·1
1	345·8	346·6	347·3	348·1	348·8	349·6	350·4	351·1	351·9	352·6
0	353·3	354·1	354·8	355·6	356·3	357·1	357·8	358·5	359·3	360·0

TABLE XVII. A.

Sun's mean Longitude and Equation for every complete day of Hindu Solar year.

Day	⊙'s mean longitude. Degrees.	Eqn.	Day	⊙'s mean longitude. Degrees.	Eqn.	Day	⊙'s mean longitude. Degrees.	Eqn.	Day	⊙'s mean longitude. Degrees.	Eqn.	Day	⊙'s mean longitude. Degrees.	Eqn.
0	357·8606	+2·1378	**61**	57·9823	+·7267	**122**	118·1041	—1·4333	**183**	178·2258	—2·1367	**244**	238·3476	—·7203
1	358·8462	2·1333	**62**	58·9679	·6919	**123**	119·0897	1·4586	**184**	179·2114	2·1305	**245**	239·3332	·6833
2	359·8318	2·1228	**63**	59·9535	·6561	**124**	120·0753	1·4883	**185**	180·1970	2·1219	**246**	240·3188	·6469
3	0·8174	2·1133	**64**	60·9391	·6192	**125**	121·0609	1·5133	**186**	181·1827	2·1133	**247**	241·3044	·6097
4	1·8030	2·1036	**65**	61·9247	·5847	**126**	122·0465	1·5405	**187**	182·1683	2·1061	**248**	242·2190	·5739
5	2·7886	2·0967	**66**	62·9103	·5480	**127**	123·0321	1·5667	**188**	183·1539	2·0964	**249**	243·2756	·5369
6	3·7742	2·0858	**67**	63·8959	·5111	**128**	124·0177	1·5919	**189**	184·1395	2·0853	**250**	244·2612	·5000
7	4·7598	2·0767	**68**	64·8815	·4739	**129**	125·0037	1·6167	**190**	185·1251	2·0753	**251**	245·2468	·4636
8	5·7454	2·0647	**69**	65·8671	·4369	**130**	125·8889	1·6433	**191**	186·1107	2·0642	**252**	246·3324	·4253
9	6·7310	2·0514	**70**	66·8527	·4000	**131**	126·9745	1·6667	**192**	187·0963	2·0519	**253**	247·2180	·3883
10	7·7166	2·0394	**71**	67·8383	·3622	**132**	127·9601	1·6894	**193**	188·0819	2·0383	**254**	248·2036	·3500
11	8·7022	2·0267	**72**	68·8239	·3192	**133**	128·9457	1·7133	**194**	189·0675	2·0261	**255**	249·1892	·3122
12	9·6878	2·0122	**73**	69·8096	·2869	**134**	129·9313	1·7358	**195**	190·0531	2·0125	**256**	250·1748	·2753
13	10·6734	1·9986	**74**	70·7952	·2486	**135**	130·9169	1·7572	**196**	191·0387	1·9978	**257**	251·1604	·2369
14	11·6590	1·9833	**75**	71·7808	·2167	**136**	131·9025	1·7789	**197**	192·0243	1·9819	**258**	252·1460	·1992
15	12·6446	1·9667	**76**	72·7664	·1717	**137**	132·8881	1·8000	**198**	193·0099	1·9661	**259**	253·1316	·1597
16	13·6302	1·9500	**77**	73·7520	·1333	**138**	133·8737	1·8217	**199**	193·9955	1·9514	**260**	254·1172	·1228
17	14·6158	1·9333	**78**	74·7376	·0975	**139**	134·8593	1·8419	**200**	194·9811	1·9333	**261**	255·1029	·0847
18	15·6014	1·9167	**79**	75·7232	·0600	**140**	135·8449	1·8597	**201**	195·9967	1·9161	**262**	256·0885	·0469
19	16·5870	1·9000	**80**	76·7088	·0203	**141**	136·8305	1·8789	**202**	196·9523	1·9003	**263**	257·0741	·0086
20	17·5726	1·8833	**81**	77·6944	—·0167	**142**	137·8161	1·8980	**203**	197·9379	1·8808	**264**	258·0597	+·0394
21	18·5582	1·8622	**82**	78·6800	·0550	**143**	138·8017	1·9167	**204**	198·9235	1·8600	**265**	259·0453	·0764
22	19·5438	1·8419	**83**	79·6656	·0933	**144**	139·7873	1·9333	**205**	199·9091	1·8417	**266**	260·0309	·1111
23	20·5294	1·8217	**84**	80·6512	·1314	**145**	140·7729	1·9500	**206**	200·8947	1·8222	**267**	261·0165	·1469
24	21·5150	1·8025	**85**	81·6368	·1692	**146**	141·7585	1·9667	**207**	201·8803	1·8014	**268**	262·0021	·1847
25	22·5006	1·7814	**86**	82·6224	·2072	**147**	142·7441	1·9825	**208**	202·8659	1·7805	**269**	262·9877	·2239
26	23·4862	1·7600	**87**	83·6080	·2444	**148**	143·7298	1·9980	**209**	203·8515	1·7575	**270**	263·9733	·2586
27	24·4718	1·7383	**88**	84·5936	·2833	**149**	144·7154	2·0122	**210**	204·8371	1·7369	**271**	264·9589	·2992
28	25·4574	1·7167	**89**	85·5792	·3203	**150**	145·7010	2·0253	**211**	205·8227	1·7139	**272**	265·9445	·3369
29	26·4430	1·6933	**90**	86·5648	·3572	**151**	146·6866	2·0369	**212**	206·8083	1·6894	**273**	266·9301	·3739
30	27·4286	1·6680	**91**	87·5504	·3955	**152**	147·6722	2·0492	**213**	207·7939	1·6664	**274**	267·9157	·4122
31	28·4142	1·6455	**92**	88·5360	·4333	**153**	148·6578	2·0611	**214**	208·7795	1·6433	**275**	268·9013	·4500
32	29·3998	1·6192	**93**	89·5216	·4692	**154**	149·6434	2·0739	**215**	209·7651	1·6178	**276**	269·8869	·4869
33	30·3854	1·5955	**94**	90·5072	·5061	**155**	150·6290	2·0858	**216**	210·7507	1·5922	**277**	270·8725	·5253
34	31·3710	1·5692	**95**	91·4928	·5433	**156**	151·6146	2·0955	**217**	211·7363	1·5667	**278**	271·8581	·5611
35	32·3567	1·5455	**96**	92·4784	·5789	**157**	152·6002	2·1036	**218**	212·7219	1·5411	**279**	272·8437	·59[illegible]
36	33·3423	1·5167	**97**	93·4640	·6167	**158**	153·5858	2·1136	**219**	213·7105	1·5130	**280**	273·8293	·6347
37	34·3279	1·4914	**98**	94·4496	·6525	**159**	154·5714	2·1228	**220**	214·6931	1·4869	**281**	274·8149	·6692
38	35·3135	1·4633	**99**	95·4352	·6894	**160**	155·5570	2·1314	**221**	215·6787	1·4589	**282**	275·8005	·7061
39	36·2991	1·4358	**100**	96·4208	·7228	**161**	156·5426	2·1383	**222**	216·6643	1·4308	**283**	276·7861	·7419
40	37·2847	1·4061	**101**	97·4064	·7586	**162**	157·5282	2·1433	**223**	217·6499	1·4028	**284**	277·7717	·7764
41	38·2703	1·3778	**102**	98·3920	·7944	**163**	158·5138	2·1494	**224**	218·6356	1·3733	**285**	278·7573	·8122
42	39·2559	1·3480	**103**	99·3776	·8289	**164**	159·4994	2·1567	**225**	219·6212	1·3439	**286**	279·7429	·8469
43	40·2415	1·3180	**104**	100·3632	·8633	**165**	160·4850	2·1603	**226**	220·6068	1·3144	**287**	280·7285	·8803
44	41·2271	1·2894	**105**	101·3488	·8986	**166**	161·4706	2·1617	**227**	221·5924	1·2828	**288**	281·7141	·9147
45	42·2127	1·2586	**106**	102·3344	·9333	**167**	162·4562	2·1667	**228**	222·5780	1·2533	**289**	282·6997	·9500
46	43·1983	1·2197	**107**	103·3200	·9667	**168**	163·4418	2·1692	**229**	223·5636	1·2228	**290**	283·6853	·9833
47	44·1839	1·1967	**108**	104·3056	1·0009	**169**	164·4274	2·1728	**230**	224·5492	1·1905	**291**	284·6709	1·0192
48	45·1695	1·1647	**109**	105·2912	1·0333	**170**	165·4130	2·1742	**231**	225·5348	1·1589	**292**	285·6565	1·0508
49	46·1551	1·1347	**110**	106·2760	1·0667	**171**	166·3986	2·1755	**232**	226·5204	1·1283	**293**	286·6421	1·0850
50	47·1407	1·1014	**111**	107·2625	1·1000	**172**	167·3842	2·1769	**233**	227·5060	1·0967	**294**	287·6277	1·1167
51	48·1263	1·0703	**112**	108·2481	1·1308	**173**	168·3698	2·1755	**234**	228·4916	1·0614	**295**	288·6133	1·1483
52	49·1119	1·0369	**113**	109·2337	1·1622	**174**	169·3554	2·1742	**235**	229·4772	1·0283	**296**	289·5984	1·1814
53	50·0975	1·0025	**114**	110·2193	1·1955	**175**	170·3410	2·1728	**236**	230·4628	·9953	**297**	290·5845	1·2130
54	51·0831	·9703	**115**	111·2049	1·2253	**176**	171·3266	2·1714	**237**	231·4484	·9622	**298**	291·5701	1·2439
55	52·0687	·9358	**116**	112·1905	1·2561	**177**	172·3122	2·1678	**238**	232·4340	·9280	**299**	292·5558	1·2747
56	53·0543	·9025	**117**	113·1761	1·2858	**178**	173·2978	2·1642	**239**	233·4196	·8928	**300**	293·5414	1·3036
57	54·0399	·8667	**118**	114·1617	1·3167	**179**	174·2834	2·1597	**240**	234·4052	·8597	**301**	294·5270	1·3322
58	55·0955	·8333	**119**	115·1473	1·3455	**180**	175·2690	2·1561	**241**	235·3908	·8228	**302**	295·5126	1·3622
59	56·0111	·7964	**120**	116·1329	1·3739	**181**	176·2546	2·1489	**242**	236·3764	·7894	**303**	296·4982	1·3903
60	56·9967	·7622	**121**	117·1185	1·4025	**182**	177·2402	2·1439	**243**	237·3620	·7536	**304**	297·4838	1·4197

Tab. XVII. A.- *contd.*

Day	⊙'s mean longitude. Degrees.	Eqn.
305	298·4694	+1·4492
306	299·4550	1·4747
307	300·4406	1·5042
308	301·4262	1·5297
309	302·4118	1·5567
310	303·3974	1·5833
311	304·3830	1·6089
312	305·3686	1·6344
313	306·3542	1·6589
314	307·3398	1·6819
315	308·3254	1·7050
316	309·3110	1·7280
317	310·2966	1·7497
318	311·2822	1·7728
319	312·2678	1·7922
320	313·2534	1·8153
321	314·2390	1·8347
322	315·2226	1·8530
323	316·2102	1·8725
324	317·1958	1·8917
325	318·1814	1·9111
326	319·1670	1·9269
327	320·1526	1·6453
328	321·1382	1·9611
329	322·1238	1·9758
330	323·1094	1·9917
331	324·0950	2·0064
332	325·0806	2·0211
333	326·0662	2·0347
334	327·0518	2·0483
335	328·0370	2·0597
336	329·0231	2·0708
337	330·0087	2·0819
338	330·9943	2·0930
339	331·9799	2·1017
340	332·9655	2·1114
341	333·9511	2·1211
342	334·9367	2·1283
343	335·9223	2·1369
344	336·9079	2·1430
345	337·8935	2·1480
346	338·8791	2·1542
347	339·8647	2·1592
348	340·8503	2·1628
349	341·8359	2·1653
350	342·8215	2·1689
351	343·8071	2·1703
352	344·7927	2·1717
353	345·7783	2·1730
354	346·7639	2·1755
355	347·7495	2·1764
356	348·7351	2·1739
357	349·7207	2·1714
358	350·7063	2·1700
359	351·6919	2·1686
360	352·6775	2·1650
361	353·6631	2·1625
362	354·6487	2·1589
363	355·6343	2·1528
364	356·6199	2·1467
365	357·6055	2·1405

TABLE XVII B.

RAHU.

Mean place of Rahu for centuries, odd years, days and fractions of days.

Mean place of Rahu for Centuries.

	K.Y.	Deg.	A.D.	K.Y.	Deg.	A.D.	K.Y.	Deg.
1 B.C.	3101	285·2370	700	3801	58·2280	1400	4501	191·2191
100 A.D.	3201	149·9500	800	3901	282·9410	1500	4601	55·9321
200	3301	14·6630	900	4001	147·6540	1600	4701	280·6451
300	3401	239·3760	1000	4101	12·3670	1700	4801	145·3581
400	3501	104·0890	1100	4201	237·0800	1800	4901	10·0711
500	3601	328·8020	1200	4301	101·7931	1900	5001	234·7841
600	3701	193·5150	1300	4401	326·5061	2000	5101	99·4971

Mean place of Rahu for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	19·3529	18	348·3517	35	317·3504	52	286·3492	69	255·3480	86	224·3468	100	135·2870
2	38·7057	19	7·7045	36	336·7033	53	305·7021	70	274·7009	87	243·6997	200	270·5740
3	58·0586	20	27·0574	37	356·0562	54	325·0550	71	294·0538	88	263·0525	300	45·8610
4	77·4115	21	46·4103	38	15·4091	55	344·4078	72	313·4066	89	282·4054	400	181·1480
5	96·7643	22	65·7631	39	34·7619	56	3·7607	73	332·7595	90	301·7583	500	316·4350
6	116·1172	23	85·1160	40	54·1148	57	23·1136	74	352·1124	91	321·1112	600	91·7220
7	135·4701	24	104·4689	41	73·4677	58	42·4664	75	11·4652	92	340·4640	700	227·0090
8	154·8229	25	123·8217	42	92·8205	59	61·8193	76	30·8181	93	359·8169	800	2·2960
9	174·1758	26	143·1746	43	112·1734	60	81·1722	77	50·1710	94	19·1698	900	137·5830
10	193·5287	27	162·5275	44	131·5263	61	100·5251	78	69·5238	95	38·5226	1000	272·8700
11	212·8816	28	181·8803	45	150·8791	62	119·8779	79	88·8767	96	57·8755	2000	185·7400
12	232·2344	29	201·2332	46	170·2320	63	139·2308	80	108·2296	97	77·2284	3000	98·6098
13	251·5873	30	220·5861	47	189·5849	64	158·5837	81	127·5825	98	96·5812	4000	11·4798
14	270·9402	31	239·9390	48	208·9377	65	177·9365	82	146·9353	99	115·9341	5000	284·3497
15	290·2930	32	259·2918	49	228·2906	66	197·2894	83	166·2882	...	...	...	...
16	309·6459	33	278·6447	50	247·6435	67	216·6423	84	185·6411	...	...	...	...
17	328·9988	34	297·9976	51	266·9964	68	235·9951	85	204·9939	...	...	...	...

Mean place of Rahu at Ujjain Sunrise on 0 day of each Solar Year.

A.D. 1840 to A.D. 1920.

A.D.	Deg.	A.D.	Deg.	A.D.	Deg.	A.D.	Deg.	A.D.	Deg.	A.D.	Deg.
1840	315·9563	1854	45·0161	1868	134·0759	1882	223·1357	1896	312·1956	1910	41·2554
1841	296·6034	1855	25·6632	1869	114·7231	1883	203·7829	1897	292·8427	1911	21·9025
1842	277·2505	1856	6·3104	1870	95·3702	1884	184·4300	1898	273·4898	1912	2·5496
1843	257·8977	1857	346·9575	1871	76·0173	1885	165·0771	1899	254·1370	1913	343·1968
1844	238·5448	1858	327·6046	1872	56·6644	1886	145·7243	1900	234·7841	1914	323·8439
1845	219·1919	1859	308·2518	1873	37·3116	1887	126·3714	1901	215·4312	1915	304·4910
1846	199·8391	1860	288·8989	1874	17·9587	1888	107·0185	1902	196·0783	1916	285·1382
1847	180·4862	1861	269·5460	1875	358·6058	1889	87·6657	1903	176·7255	1917	265·7853
1848	161·1333	1862	250·1931	1876	339·2530	1890	68·3128	1904	157·3726	1918	246·4324
1849	141·7805	1863	230·8403	1877	319·9001	1891	48·9599	1905	138·0197	1919	227·0793
1850	122·4276	1864	211·4874	1878	300·5472	1892	29·6070	1906	118·6669	...	...
1851	103·0747	1865	192·1345	1879	281·1944	1893	10·2542	1907	99·3140	...	...
1852	83·7218	1866	172·7817	1880	261·8415	1894	350·9013	1908	79·9611	...	...
1853	64·3690	1867	153·4288	1881	242·4886	1895	331·5484	1909	60·6083	...	...

Mean place of Rahu for every 10 days and for fractions of a Day.

Day.	Deg.	Days.	Deg.	Days.	Deg.	Days.	Deg.	Days.	Deg.	Days.	Deg.
·1	·0053	1	·0530	10	·5298	100	5·2984	190	10·0669	280	14·8355
·2	·0106	2	·1060	20	1·0597	110	5·8282	200	10·5968	290	15·3654
·3	·0159	3	·1589	30	1·5895	120	6·3581	210	11·1266	300	15·8952
·4	·0212	4	·2119	40	2·6194	130	6·8879	220	11·6565	310	16·4250
·5	·0265	5	·2649	50	2·6492	140	7·4177	230	12·1863	320	16·9549
·6	·0318	6	·3179	60	3·1790	150	7·9476	240	12·7162	330	17·4847
·7	·0371	7	·3709	70	3·7089	160	8·4774	250	13·2460	340	18·0145
·8	·0424	8	·4239	80	4·2387	170	9·0073	260	13·7758	350	18·5444
·9	·0477	9	·4768	90	4·7686	180	9·5371	270	14·3057	360	19·0742

TABLE XVII—C.

Decimal parts of ☉'s L. for one day.

Day.	Degree.	Day.	Degree.
·01	·0099	·51	·5027
·02	·0197	·52	·5125
·03	·0296	·53	·5224
·04	·0394	·54	·5322
·05	·0493	·55	·5421
·06	·0591	·56	·5519
·07	·0690	·57	·5618
·08	·0788	·58	·5716
·09	·0887	·59	·5815
·10	·0986	·60	·5914
·11	·1084	·61	·6012
·12	·1183	·62	·6111
·13	·1281	·63	·6209
·14	·1380	·64	·6308
·15	·1478	·65	·6406
·16	·1577	·66	·6505
·17	·1675	·67	·6603
·18	·1774	·68	·6702
·19	·1873	·69	·6801
·20	·1971	·70	·6899
·21	·2070	·71	·6998
·22	·2168	·72	·7096
·23	·2267	·73	·7195
·24	·2365	·74	·7293
·25	·2464	·75	·7392
·26	·2563	·76	·7491
·27	·2601	·77	·7589
·28	·2760	·78	·7688
·29	·2858	·79	·7786
·30	·2957	·80	·7885
·31	·3055	·81	·7983
·32	·3154	·82	·8082
·33	·3252	·83	·8180
·34	·3351	·84	·8279
·35	·3450	·85	·8378
·36	·3548	·86	·8476
·37	·3647	·87	·8575
·38	·3745	·88	·8673
·39	·3844	·89	·8772
·40	·3942	·90	·8870
·41	·4041	·91	·8969
·42	·4139	·92	·9067
·43	·4238	·93	·9166
·44	·4337	·94	·9265
·45	·4435	·95	·9363
·46	·4534	·96	·9462
·47	·4632	·97	·9560
·48	·4731	·98	·9659
·49	·4829	·99	·9757
·50	·4928	1·00	·9856

TABLE XVII—D.

Decimal parts of increase of ☾'s L. for one nakshatra.

	Degrees.		Degrees.
·01	·1333	·51	6·8000
·02	·2666	·52	6·9333
·03	·4000	·53	7·0666
·04	·5333	·54	7·2000
·05	·6666	·55	7·3333
·06	·8000	·56	7·4666
·07	·9333	·57	7·6000
·08	1·0666	·58	7·7333
·09	1·2000	·59	7·8666
·10	1·3333	·60	8·0000
·11	1·4666	·61	8·1333
·12	1·6000	·62	8·2666
·13	1·7333	·63	8·4000
·14	1·8666	·64	8·5333
·15	2·0000	·65	8·6666
·16	2·1333	·66	8·8000
·17	2·2666	·67	8·9333
·18	2·4000	·68	9·0666
·19	2·5333	·69	9·2000
·20	2·6666	·70	9·3333
·21	2·8000	·71	9·4666
·22	2·9333	·72	9·6000
·23	3·0666	·73	9·7333
·24	3·2000	·74	9·8666
·25	3·3333	·75	10·0000
·26	3·4666	·76	10·1333
·27	3·6000	·77	10·2666
·28	2·7333	·78	10·4000
·29	3·8666	·79	10·5333
·30	4·0000	·80	10·6666
·31	4·1333	·81	10·8000
·32	4·2666	·82	10·9333
·33	4·4000	·83	11·0666
·34	4·5333	·84	11·2000
·35	4·6666	·85	11·3333
·36	4·8000	·86	11·4666
·37	4·9333	·87	11·6000
·38	5·0666	·88	11·7333
·39	5·2000	·89	11·8666
·40	5·3333	·90	12·0000
·41	5·4666	·91	12·1333
·42	5·6000	·92	12·2666
·43	5·7333	·93	12·4000
·44	5·8666	·94	12·5333
·45	6·0000	·95	12·6666
·46	6·1333	·96	12·8000
·47	6·2666	·97	12·9333
·48	6·4000	·98	13·0666
·49	6·5333	·99	13·2000
·50	6·6666	1·00	13·3333

TABLE XVII—E.

Eqn. in minutes of a degree for ascertaining the latitude of a planet.

Degree.	Mar.	Mer.	Jup.	Ven.	Sat.	Degree.
0·00	5682	4708	4107	5940	3811	360·00
3·75	5678	4706	4107	5936	3810	356·25
7·50	5667	4699	4104	5925	3809	352·50
11·25	5651	4688	4099	5909	3806	348·75
15·00	5629	4674	4092	5886	3801	345·00
18·75	5601	4656	4083	5857	3795	341·25
22·50	5567	4634	4071	5822	3788	337·50
26·25	5528	4608	4056	5781	3779	333·75
30·00	5484	4578	4040	5734	3769	330·00
33·75	5431	4545	4021	5681	3758	326·25
37·50	5379	4507	3999	5622	3745	322·50
41·25	5318	4467	3976	5558	3731	318·75
45·00	5252	4423	3951	5487	3716	315·00
48·75	5181	4375	3922	5412	3699	311·25
52·50	5104	4324	3892	5331	3682	307·50
56·25	5023	4270	3860	5244	3663	303·75
60·00	4937	4213	3827	5152	3643	300·00
63·75	4846	4153	3791	5055	3623	296·25
67·50	4751	4090	3754	4953	3601	292·50
71·25	4651	4025	3716	4846	3579	288·75
75·00	4547	3957	3676	4734	3556	285·00
78·75	4429	3836	3635	4617	3534	281·25
82·50	4327	3813	3593	4496	3509	277·50
86·25	4210	3738	3550	4371	3484	273·75
90·00	4090	3662	3506	4241	3459	270·00
93·75	3966	3584	3461	4107	3434	266·25
97·50	3839	3504	3417	3970	3409	262·50
101·25	3708	3423	3372	3828	3384	258·75
105·00	3575	3341	3326	3684	3359	255·00
108·75	3410	3259	3282	3536	3335	251·25
112·50	3303	3177	3238	3385	3313	247·50
116·25	3162	3095	3195	3231	3289	243·75
120·00	3019	3012	3152	3075	3265	240·00
123·75	2875	2930	3110	2916	3242	236·25
127·50	2730	2851	3070	2756	3221	232·50
131·25	2585	2773	3032	2594	3200	228·75
135·00	2440	2697	2995	2432	3181	225·00
138·75	2295	2624	2961	2269	3162	221·25
142·50	2152	2554	2928	2106	3146	217·50
146·25	2011	2487	2898	1945	3131	213·75
150·00	1874	2426	2871	1786	3117	210·00
153·75	1743	2370	2847	1630	3104	206·25
157·50	1618	2319	2825	1481	3092	202·50
161·25	1503	2275	2807	1341	3083	198·75
165·00	1402	2238	2793	1213	3077	195·00
168·75	1317	2208	2782	1101	3072	191·25
172·50	1251	2186	2774	1013	3068	187·50
176·25	1209	2173	2770	956	3066	183·75
180·00	1194	2168	2769	936	3065	180·00

In applying the above equations the following data, giving the inclination of the moon's orbit to the ecliptic and the greatest apparent latitude of the other planets have to be remembered:—

Inclination of ☾'s orbit 4° 30′, Sine 270′
Greatest latitude Mars 1° 30′ „ 90′
„ „ Mercury 2° 0′ „ 120′
„ „ Jupiter 1° 16′ „ 78′
„ „ Venus 2° 16′ „ 138′
„ „ Saturn 2° 10′ „ 132′

TABLE XVII.—F.

Table of Hindu Sines.

Degree. +	Sine.	Degree. —	Diff. +
0·00	000	180·00	...
3·75	225	183·75	225
7·50	449	187·50	224
11·25	671	191·25	222
15·00	890	195·00	219
18·75	1105	198·75	215
22·50	1315	202·50	210
26·25	1520	206·25	205
30·00	1719	210·00	199
33·75	1910	213·75	191
37·50	2093	217·50	183
41·25	2267	221·25	174
45·00	2431	225·00	164
48·75	2585	228·75	154
52·50	2728	232·50	143
56·25	2859	236·25	131
60·00	2978	240·00	119
63·75	3084	243·75	106
67·50	3177	247·50	93
71·25	3256	251·25	79
75·00	3321	255·00	65
78·75	3372	258·75	51
82·50	3409	262·50	37
86·25	3431	266·25	22
90·00	3438	270·00	7
			—
93·75	3431	273·75	7
97·50	3409	277·50	22
101·25	3372	281·25	37
105·00	3321	285·00	51
108·75	3256	288·75	65
112·50	3177	292·50	79
116·25	3084	296·25	9[illegible]
120·00	2978	300·00	106
123·75	2859	303·75	119
127·50	2728	307·50	131
131·25	2585	311·25	143
135·00	2431	315·00	154
138·75	2267	318·75	164
142·50	2093	322·50	174
146·25	1910	326·25	183
150·00	1719	330·00	191
153·75	1520	333·75	199
157·50	1315	337·50	205
161·25	1105	341·25	210
165·00	890	345·00	215
168·75	671	348·75	219
172·50	449	352·50	222
176·25	225	356·25	224
180·00	000	360·00	225

TABLE XVII.—G.

Decimal parts of 3·75 degrees [Example 3·2°=·853 of 3·75°].

0·1	·026666	0·6	·160000	1·1	·293333	1·6	·426666	2·1	·560000	2·6	·693333	3·1	·826666	3·6	·960000
0·2	·053333	0·7	·186666	1·2	·320000	1·7	·453333	2·2	·586666	2·7	·720000	3·2	·853333	3·7	·986666
0·3	·080000	0·8	·213333	1·3	·346666	1·8	·480000	2·3	·613333	2·8	·746666	3·3	·880000		
0·4	·106666	0·9	·240000	1·4	·373333	1·9	·506666	2·4	·640000	2·9	·773333	3·4	·906666		
0·5	·133333	1·0	·266666	1·5	·400000	2·0	·533333	2·5	·666666	3·0	·800000	3·5	·933333		

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
⊙'s Mean L.		357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.		+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
Tamil month.		Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. date.		1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1840	Mars ...	5·0	12·6	20·0	27·2	34·5	41·7	48·8	55·7	62·5	69·4	76·1	82·9	89·3	95·8	102·3	108·6	114·9	121·0
⊙'s L.	Merc. ...	0·0	352·6	353·4	3·2	18·4	36·1	55·0	73·8	92·0	108·5	121·1	126·7	122·4	115·9	115·5	128·6	143·3	160·3
+·8	Jup. ...	204·8	203·5	202·2	200·9	199·8	198·5	197·7	197·0	196·7	196·3	196·4	197·4	198·3	199·5	200·9	202·5	204·3	206·3
	Ven. ...	332·1	344·4	356·4	8·8	21·0	33·2	45·5	57·7	69·6	82·3	94·5	106·8	119·0	131·3	143·1	155·9	168·4	180·6
	Sat. ...	239·1	238·6	238·1	237·7	237·0	236·3	235·5	234·8	234·1	233·4	233·0	232·6	232·3	232·4	232·4	232·5	233·1	233·7
1841	Mars ...	187·5	183·9	180·7	177·8	176·8	177·1	178·4	181·0	184·1	188·0	192·6	197·6	203·0	208·8	214·7	221·1	227·6	234·4
⊙'s L.	Merc. ...	333·8	343·0	357·2	14·7	33·5	52·6	70·8	85·9	101·0	108·3	105·4	98·2	99·3	109·2	123·8	140·6	158·4	176·0
+·5	Jup. ...	238·2	237·8	237·0	236·1	235·1	233·8	232·6	231·2	230·0	228·9	228·3	227·7	227·7	228·0	228·6	229·3	230·4	231·8
	Ven. ...	39·1	41·9	41·5	36·9	30·9	26·1	23·8	27·7	33·5	41·1	49·9	59·4	69·7	80·5	91·5	102·8	114·5	126·4
	Sat. ...	250·5	250·2	249·9	249·5	248·5	247·5	246·5	246·1	245·7	245·3	245·4	245·5	245·6	244·8	244·0	243·2	243·6	244·0
1842	Mars ...	19·7	26·9	33·9	41·0	47·9	55·0	61·8	68·4	75·3	81·9	88·6	95·0	101·5	107·5	114·3	120·9	127·0	133·3
⊙'s L.	Merc. ...	335·0	351·8	10·8	29·1	47·9	65·4	79·9	88·8	88·2	80·8	79·8	88·1	102·0	118·6	136·7	154·5	171·7	187·2
+·3	Jup. ...	269·6	270·3	270·5	270·7	270·5	269·8	268·9	267·7	266·5	265·2	263·9	262·7	261·7	260·9	260·4	260·2	260·2	260·6
	Ven. ...	8·6	21·0	33·3	45·5	57·7	70·1	82·0	94·1	105·9	117·9	129·7	141·7	153·4	164·8	176·7	187·6	198·7	209·5
	Sat. ...	261·3	260·9	260·5	260·0	259·8	259·6	259·4	258·7	258·0	257·3	256·6	255·9	255·1	254·8	254·5	254·2	254·5	254·8
1843	Mars ...	237·0	239·1	240·3	240·3	239·3	237·3	234·4	231·5	229·4	228·4	228·5	230·3	233·0	236·7	241·1	246·6	251·5	257·4
⊙'s L.	Merc. ...	347·0	6·7	24·5	42·3	57·7	68·2	70·4	63·2	60·1	67·0	80·0	96·3	114·4	132·6	150·3	166·8	179·7	186·8
+·0	Jup. ...	298·9	300·6	302·0	303·1	304·2	304·7	305·2	305·3	304·8	304·2	302·9	301·4	300·7	299·3	298·0	296·9	295·9	295·2
	Ven. ...	315·9	327·5	339·4	351·3	3·3	15·2	27·0	39·0	51·1	63·3	75·4	87·3	99·4	111·8	124·0	136·4	148·8	161·2
	Sat. ...	272·2	272·3	272·4	272·5	272·1	271·7	271·3	270·6	269·9	269·2	268·5	267·8	267·0	266·5	266·0	265·5	265·5	265·5
1844	Mars ...	34·7	41·5	48·3	55·0	61·8	68·4	75·0	81·5	88·1	94·6	100·0	107·5	113·9	120·3	126·6	132·9	139·4	145·7
⊙'s L.	Merc. ...	3·1	21·0	36·8	48·3	51·3	45·0	40·8	46·4	59·0	75·4	93·5	112·1	130·2	147·0	161·2	169·7	169·3	161·4
+·7	Jup. ...	327·3	329·5	331·5	333·6	335·4	337·1	338·6	339·7	340·5	341·0	341·2	341·1	340·5	339·6	338·5	337·4	336·1	334·7
	Ven. ...	42·4	53·4	64·1	74·6	83·9	93·0	100·1	105·7	108·3	107·1	102·1	95·1	91·5	91·4	94·5	100·5	108·4	117·0
	Sat. ...	283·1	283·4	283·7	284·0	283·8	283·6	283·3	282·7	282·0	281·4	280·6	279·9	279·1	278·5	277·9	277·2	277·0	276·8
1845	Mars ...	267·9	273·6	279·4	284·6	289·8	294·5	298·8	302·5	305·1	307·3	307·7	306·4	304·7	301·9	299·4	298·2	297·8	299·1
⊙'s L.	Merc. ...	14·4	25·6	32·5	27·6	21·5	25·2	36·8	52·7	70·6	89·4	107·9	125·4	140·7	151·3	153·6	146·8	142·5	147·4
+·5	Jup. ...	354·9	357·3	359·7	2·1	4·5	6·5	8·2	10·6	12·4	14·0	15·4	16·5	17·3	17·6	17·7	17·4	16·8	15·8
	Ven. ...	350·2	2·7	15·0	27·5	39·7	51·9	64·2	76·8	88·6	100·7	113·3	125·4	137·5	149·5	161·8	174·0	186·1	198·1
	Sat. ...	293·8	294·4	294·9	295·4	295·4	295·4	295·4	294·8	294·3	293·8	293·0	292·3	291·6	290·8	290·1	289·4	289·1	288·7
1846	Mars ...	49·0	55·4	61·8	68·2	74·5	80·9	87·3	93·5	100·0	106·4	112·7	118·9	125·4	131·7	138·1	144·4	150·9	157·2
⊙'s L.	Merc. ...	12·9	10·3	3·1	4·4	14·4	29·5	47·4	66·5	85·0	103·0	119·3	131·6	136·9	132·0	125·7	128·3	139·0	153·7
+·2	Jup. ...	22·5	24·8	27·1	29·5	31·9	34·3	36·7	39·0	41·1	43·4	45·4	47·2	48·9	51·0	51·6	52·6	53·3	53·6
	Ven. ...	317·7	324·6	332·8	341·9	352·0	2·6	13·2	24·4	35·7	47·4	59·1	70·7	82·5	94·4	106·4	118·8	130·9	143·2
	Sat. ...	304·6	305·4	306·2	306·9	307·2	307·4	307·6	307·3	307·0	306·7	306·0	305·3	304·6	303·8	303·0	302·2	301·6	301·0
1847	Mars ...	289·5	296·7	303·8	310·3	317·8	324·9	331·6	338·2	344·8	351·0	356·7	2·1	8·1	12·5	16·0	18·4	19·8	20·0
⊙'s L.	Merc. ...	345·6	344·3	352·6	6·9	24·2	42·9	61·8	79·3	97·3	111·1	118·5	116·2	108·9	109·3	118·5	132·6	149·2	167·0
+·0	Jup. ...	50·3	52·2	54·3	56·5	58·7	60·0	63·3	65·7	67·9	70·2	72·5	73·9	76·9	79·0	80·9	82·7	84·1	85·3
	Ven. ...	26·8	38·9	50·8	62·8	74·6	86·2	97·6	108·9	120·0	130·6	140·9	150·3	159·2	166·7	172·5	175·5	175·4	170·6
	Sat. ...	315·7	316·6	317·5	318·4	318·9	319·4	319·8	319·7	319·6	319·5	319·0	318·5	317·9	317·1	316·3	315·6	314·8	314·1
1848	Mars ...	64·4	70·2	76·1	82·1	88·0	94·2	100·3	106·4	112·9	118·9	124·9	131·3	137·6	144·0	150·4	156·8	163·2	169·7
⊙'s L.	Merc. ...	332·5	345·7	2·7	21·4	40·2	58·2	76·5	91·0	99·4	99·1	91·4	90·3	98·7	112·6	129·4	147·0	164·9	182·1
+·7	Jup. ...	79·1	80·3	81·7	83·4	85·2	87·2	89·3	91·5	93·6	95·9	98·1	100·5	102·8	105·0	107·2	109·3	111·3	113·1
	Ven. ...	332·6	344·9	357·1	9·4	21·5	33·7	45·9	58·2	70·5	82·8	94·9	106·9	119·5	131·8	144·2	156·4	168·9	181·1
	Sat. ...	326·9	327·9	328·9	330·0	330·8	331·5	332·2	332·0	331·8	331·5	331·4	331·4	331·4	330·7	330·0	329·2	328·4	327·6
1849	Mars ...	308·9	316·4	324·1	331·7	339·3	346·8	354·0	1·4	9·4	15·5	22·3	29·0	35·5	41·5	47·4	52·9	58·1	62·7
⊙'s L.	Merc. ...	341·5	358·1	16·9	35·7	53·4	68·9	79·6	81·1	74·0	71·1	77·9	90·7	107·2	125·0	143·2	160·6	176·7	189·6
+·4	Jup. ...	109·4	109·7	110·3	111·2	112·2	113·5	115·1	116·9	118·6	120·7	122·8	124·9	127·0	129·3	131·5	133·8	135·9	138·0
	Ven. ...	37·4	40·2	38·4	33·5	26·2	23·6	23·3	26·8	32·8	40·8	49·7	59·5	70·0	80·8	91·8	103·3	115·0	126·7
	Sat. ...	338·1	339·3	340·5	341·7	342·6	343·5	344·4	344·8	345·2	345·5	345·3	345·1	345·0	344·5	343·9	343·3	342·5	341·7

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

mean Sunrise for every ten days from A.D. 1840 to A.D. 1849.

180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
174·4 −2·2 O 8 Pur 25	184·3 −2·1 O 18 Aipp 4	194·1 −1·9 O 28 Aipp 14	204·0 −1·7 N 7 Aipp 24	213·8 −1·5 N 17 Kart 4	223·7 −1·2 N 27 Kart 14	233·5 −0·9 D 7 Kart 24	243·4 −0·5 D 17 Marg 5	253·3 −0·1 D 27 Marg 15		263·1 +0·3 Ja 6 Marg 25	273·0 +0·6 Ja 16 Tai 5	282·8 +1·0 Ja 26 Tai 15	292·7 +1·3 F 5 Tai 25	302·5 +1·6 F 15 Masi 6	312·4 +1·8 F 25 Masi 16	322·2 +2·0 Mr 6,7 Masi 26	332·1 +2·1 16,17 Pang 6	342·0 +2·2 26,27 Pang 16	351·8 +2·2 Ap 5,6 Pang 26
127·0	133·2	139·0	144·9	150·4	156·0	161·5	166·8	171·8	**41**	176·6	180·8	184·8	188·3	191·1	193·1	193·8	193·9	192·0	189·0
177·9	195·4	211·6	225·3	233·7	233·1	225·4	223·1	229·9		242·9	259·0	276·4	294·4	311·4	327·3	339·4	344·3	339·3	334·2
208·0	210·2	212·3	215·3	216·8	218·9	221·2	223·4	225·6		227·7	229·6	231·4	233·2	234·7	236·0	237·1	237·8	238·3	238·4
193·1	205·7	217·9	230·4	242·7	255·1	267·4	279·5	292·0		303·9	315·6	327·5	339·2	350·3	0·9	11·1	20·6	29·3	35·8
234·2	235·1	236·0	237·0	238·1	239·2	240·4	241·7	243·0		244·2	245·3	246·4	247·5	248·4	249·3	250·1	250·4	250·7	251·1
241·2	248·3	255·7	262·9	270·4	277·8	285·2	293·0	300·6	**42**	308·5	316·0	323·6	331·2	338·8	346·5	354·0	1·3	8·9	16·0
192·8	207·3	216·8	218·4	210·8	207·1	211·2	224·2	239·7		256·9	274·6	291·8	307·6	320·3	325·6	322·1	315·3	317·3	327·8
233·3	235·2	237·1	239·1	241·2	243·4	245·7	248·0	250·2		252·5	254·8	257·0	259·3	261·3	263·1	265·0	266·5	268·1	269·3
138·4	150·1	162·3	174·6	187·0	199·3	211·7	224·1	236·7		249·3	262·0	274·7	287·1	299·8	312·3	324·9	337·5	349·8	2·2
244·4	245·3	246·2	247·0	248·1	249·2	250·2	251·4	252·6		253·7	254·8	255·9	257·1	258·0	258·9	259·7	260·3	260·9	261·4
140·4	145·7	151·8	157·8	163·8	169·9	175·7	181·7	187·5	**43**	193·2	198·3	204·3	209·7	214·8	219·7	224·3	228·6	232·5	235·7
198·9	203·3	197·8	191·5	194·0	204·7	219·1	235·7	253·3		270·7	287·0	300·3	308·2	306·6	298·9	298·0	306·8	320·9	338·0
261·7	262·8	264·3	265·8	267·4	269·3	271·5	273·6	275·9		278·2	280·4	282·8	285·2	287·5	289·7	292·0	294·2	296·2	298·1
219·5	229·2	237·5	244·8	250·0	251·8	250·1	244·1	240·9		236·6	237·7	242·6	249·6	257·6	266·2	277·2	288·0	299·0	310·2
255·0	255·7	256·4	257·0	258·0	259·0	260·1	261·2	262·3		263·5	264·7	265·9	267·0	268·0	269·0	270·1	270·8	271·5	272·1
263·6	270·2	277·7	283·6	290·5	297·6	304·9	312·0	319·3	**44**	326·6	333·9	341·2	348·2	355·5	2·5	9·6	16·6	23·6	30·6
184·5	176·7	176·4	185·0	198·9	215·0	232·1	249·4	266·4		280·3	290·1	291·1	283·7	280·3	286·4	299·1	315·6	333·6	352·6
294·7	294·8	295·2	295·8	296·7	297·9	299·5	301·3	303·1		305·1	307·3	309·5	311·8	314·1	316·5	318·9	321·4	323·8	326·1
174·3	186·2	198·9	211·2	223·6	236·2	248·7	261·6	274·2		286·6	299·2	311·5	323·9	336·0	348·5	0·3	12·2	24·1	35·6
265·5	266·1	266·7	267·2	268·1	269·0	269·9	270·9	272·0		273·1	274·4	275·6	276·9	277·9	279·0	280·2	281·0	281·8	282·7
152·1	158·3	164·5	170·9	177·4	183·6	189·9	196·1	202·5	**45**	208·8	215·1	221·4	227·8	234·0	240·2	246·5	252·8	258·8	264·8
159·5	166·8	179·9	195·7	213·0	230·2	246·6	261·4	272·2		275·2	268·6	263·7	267·9	279·6	295·3	312·9	331·2	349·4	6·3
333·5	332·3	331·5	330·9	330·7	330·9	331·4	332·2	333·3		334·7	336·2	338·1	339·9	342·2	344·4	346·7	349·0	351·4	353·8
127·2	137·7	148·7	159·8	171·6	183·4	195·1	207·5	219·8		232·0	244·3	256·7	269·3	281·8	294·4	306·8	319·1	331·6	344·0
276·7	277·0	277·4	277·7	278·5	279·4	280·2	281·3	282·3		283·4	284·7	285·9	287·1	288·3	289·5	290·6	291·5	292·4	293·4
301·4	304·8	308·9	313·4	318·7	324·1	330·0	335·9	341·9	**46**	348·1	354·4	0·6	7·1	13·6	20·0	26·5	32·9	39·4	45·7
159·3	174·9	192·0	209·3	226·3	241·8	253·9	259·4	255·3		247·9	249·5	259·4	273·8	290·8	308·8	326·9	344·4	359·6	10·4
14·1	13·4	12·2	10·9	10·0	9·6	8·4	7·5	7·4		7·4	7·9	8·8	10·1	11·5	13·2	15·1	17·1	19·1	21·3
210·3	222·1	233·9	245·7	257·4	268·9	279·9	290·6	300·5		310·0	317·9	324·3	328·1	328·2	324·1	317·9	313·1	312·5	315·4
288·3	288·5	288·7	288·8	289·4	290·0	290·7	291·7	292·7		293·8	294·9	296·6	297·3	298·5	299·7	300·9	302·0	303·0	304·0
163·7	170·2	176·5	183·3	189·7	196·4	203·1	209·7	216·3	**47**	223·1	230·0	236·9	243·6	250·7	257·6	264·6	271·8	278·8	286·0
170·7	188·3	205·5	221·6	235·1	242·7	241·6	234·2	231·9		239·8	253·1	266·8	284·3	302·1	319·9	336·3	350·0	357·5	349·1
53·7	53·1	52·0	51·2	50·2	48·8	47·5	46·3	45·1		44·0	43·4	43·0	43·0	43·4	44·0	45·0	46·2	47·1	49·4
155·5	167·8	180·2	192·7	205·2	217·8	230·4	243·0	255·8		268·7	281·0	293·5	306·3	318·7	331·2	343·9	356·2	8·5	20·7
300·5	300·4	300·3	300·3	300·7	301·2	301·7	302·6	303·5		304·5	305·6	306·7	307·8	309·1	310·4	311·7	312·9	314·0	315·2
18·6	16·6	13·8	11·1	9·4	8·9	9·5	11·3	13·7	**48**	16·9	20·6	24·9	29·5	34·5	39·5	45·1	50·5	56·0	61·9
184·6	201·2	215·7	225·7	227·2	220·5	215·8	221·1	232·6		248·0	265·4	283·0	300·7	316·6	329·6	336·2	332·9	325·9	327·3
86·5	87·2	87·5	87·6	87·5	86·9	86·0	84·8	83·6		82·3	81·0	79·8	79·1	77·9	77·4	77·2	77·3	77·7	78·6
164·7	160·2	159·6	163·1	168·8	176·8	185·9	195·6	206·3		217·4	228·9	240·4	252·5	264·5	276·5	288·7	300·8	313·0	325·3
313·4	313·1	312·8	312·5	312·7	313·0	313·3	314·0	314·7		315·5	316·6	317·7	318·8	320·0	321·2	322·5	323·5	324·5	325·6
176·4	182·9	189·7	196·5	203·3	210·1	216·9	223·9	231·1	**49**	238·1	245·1	252·6	259·9	267·3	274·8	282·3	289·9	297·4	305·1
197·1	208·5	212·0	206·6	200·2	203·3	214·1	229·0	245·8		263·3	280·7	297·1	310·4	318·1	316·5	308·8	308·9	318·1	332·3
114·9	116·5	117·0	118·2	119·6	120·0	120·1	119·8	119·3		118·5	117·5	116·2	114·9	113·6	112·5	111·3	110·5	109·8	109·5
193·8	206·2	218·6	230·9	243·2	255·6	267·7	280·2	292·2		304·2	316·2	328·0	339·3	350·2	1·0	11·0	18·9	25·6	34·1
326·8	326·2	325·7	325·2	325·2	325·3	325·3	325·6	325·9		326·2	327·5	328·8	330·1	331·3	332·5	333·7	335·0	336·3	337·6
66·7	70·2	72·6	74·0	74·4	73·4	71·4	67·8	64·1	**50**	61·1	58·9	58·2	58·5	60·0	62·4	65·4	69·3	73·5	77·9
196·1	193·3	185·7	185·9	194·7	208·4	224·7	242·2	259·5		276·0	290·3	299·8	300·7	293·2	290·0	296·5	309·7	326·3	344·4
140·2	142·1	144·0	145·7	147·3	148·5	149·6	150·3	150·8		151·0	150·9	150·4	149·4	148·6	147·3	146·0	144·7	143·5	142·4
138·7	150·8	162·8	175·0	187·5	199·8	212·2	224·8	237·4		249·8	262·5	275·0	287·8	300·3	313·0	325·4	338·0	350·5	2·9
340·9	340·2	339·5	338·9	338·6	338·3	338·1	338·4	338·8		339·2	340·0	340·8	341·6	342·7	343·9	345·1	346·4	347·7	349·0

Mag.	P. Phal.	U. Phal.	Hasta.	Chit.	Svati.	Visa	Anur.	Jyesh.	Mula.	P. Ash.	U. Ash.	Srav.	Dan.	Satab.	P. Bhad.	U. Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
⊙'s Mean L.		357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.		+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au19	Au 29	S 8	S 18	S 28
Tamil month.		Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. Date.		1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1850	Mars ...	80·3	85·5	90·8	96·1	101·6	107·5	113·2	118·9	125·0	130·7	137·2	143·4	149·7	156·2	162·4	168·9	175·6	182·0
⊙'s L.	Merc. ...	353·8	12·0	30·5	46·7	58·5	62·8	58·6	51·8	56·4	68·7	84·9	102·7	121·1	139·0	155·9	170·0	179·0	179·0
+·2	Jup. ...	141·8	140·9	140·5	140·3	140·4	140·8	141·8	142·7	144·0	145·5	147·1	149·1	151·1	153·1	155·2	157·4	159·6	161·7
	Ven. ...	9·1	21·5	33·7	46·0	58·4	70·6	82·4	94·6	106·4	118·4	130·4	141·9	153·6	165·3	176·9	187·9	198·8	209·4
	Sat. ...	349·7	351·0	352·3	353·5	354·5	355·5	356·6	357·3	358·0	358·7	358·8	358·9	359·1	358·6	358·1	357·7	357·0	356·3
1851	Mars ...	326·1	333·9	341·6	349·3	356·9	4·3	12·0	19·6	26·4	33·6	40·1	47·3	54·1	60·7	66·9	73·2	79·1	84·7
⊙'s L.	Merc. ...	8·1	24·0	37·0	43·4	39·2	32·9	34·6	46·6	62·1	79·8	98·6	116·8	134.4	149·6	160·6	163·5	156·9	152·0
—·1	Jup. ...	175·3	175·1	175·0	174·8	174·7	174·9	175·2	175·7	176·3	176·9	177·8	178·3	179·9	181·3	182·6	184·0	185·5	187·0
	Ven. ...	316·2	328·1	339·9	351·8	3·6	15·8	27·5	39·5	51·6	63·8	75·9	88·0	100·1	112·3	124·5	136·9	149·3	161·4
	Sat. ...	1·4	2·7	4·0	5·3	6·6	7·9	9·1	10·0	10·8	11·6	12·1	12·5	12·9	12·7	12·4	12·1	11·6	11·0
1852	Mars ...	100·3	103·9	108·0	112·5	117·2	122·2	127·5	133·2	138·9	144·8	150·7	156·8	163·0	169·4	175·9	182·4	189.1	195·8
⊙'s L.	Merc. ...	16·8	23·9	21·1	15·1	15·3	25·7	40·9	58·7	77·3	96·1	113·9	129·9	142·1	146·8	141·5	135·5	138·5	149·2
+·7	Jup. ...	209·6	208·5	207·2	205·9	204·6	203·5	202·4	201·5	201·0	200·8	200·9	201·3	202·0	203·2	204·6	206·0	207·6	209·3
	Ven. ...	42·8	54·0	64·5	74·6	83·9	92·4	99·3	104·4	106·4	104·2	98·3	92·0	89·0	89·4	93·3	99·7	108·0	117·0
	Sat. ...	13·7	15·0	16·3	17.6	18·9	20·2	21·6	22·6	23·6	24·6	25·3	26·0	26·7	26·8	26·9	27·0	26·6	26·1
1853	Mars ...	342·9	350·7	358·5	6·	13·6	21·1	28·3	35·6	42·7	49·8	56·6	63·3	70·1	76·6	83·0	89·3	95·5	101·6
⊙'s L.	Merc. ...	3·5	356·2	355·1	3·6	17·9	35·4	54·0	73·1	91·2	108·1	121·8	128·7	126·3	118·9	119·5	128·6	142·9	159·5
+·4	Jup. ...	242·8	242·4	241·9	241·1	240·1	238·8	237·5	237·0	235·4	233·9	233·1	232·4	232·2	232·1	232·5	233·4	234·2	235·4
	Ven. ...	350·7	3·1	15·5	28·0	40·2	52·6	64·7	77·1	89·1	101·4	113·6	125·9	138·0	150·2	162·4	174·3	186·4	198·4
	Sat. ...	26·4	27·5	28·6	29·8	31·1	32·5	33·9	35·1	36·3	37·5	38·5	39·4	40·3	40·7	41·1	41·4	41·2	41·0
1854	Mars ...	126·8	127·4	129·6	132·1	135·4	139·5	144·0	148·9	154·0	159·5	165·2	171·1	177·3	183·6	190·0	196·6	203·3	210·1
⊙'s L.	Merc. ...	335·6	342·3	355·3	12·0	30·6	49·6	68·2	85·8	100·5	109·8	109·8	102·3	100·5	108·1	121·6	137·9	155·4	173·3
+·1	Jup. ...	273·7	274·4	275·1	275·6	275·6	275·2	274·5	273·5	272·3	271·0	269·7	268·5	267·2	266·3	265·7	265·1	265·0	265·4
	Ven. ...	316·8	323·9	332·3	341·8	351·9	2·7	13·5	24·7	36·0	47·8	59·5	71·2	83·2	94·9	107·1	119·3	131·4	143·7
	Sat. ...	38·5	39·8	41·1	42·3	43·7	45·1	46·5	47·8	49·1	50·5	51·5	52·6	53·6	54·3	55·0	55·7	55·8	55·9
1855	Mars ...	358·4	6·1	13·4	20·9	28·2	35·5	42·5	49·5	56·6	63·6	70·4	77·0	83·7	90·1	96·6	102·8	109·3	115·3
⊙'s L.	Merc. ...	332·9	349·1	7·2	26·2	45·2	63·0	78·8	89·5	92·4	85·6	81·7	87·4	100·1	116·0	133·9	151·7	169·2	185·4
—·1	Jup. ...	302·7	304·4	306·1	307·5	308·7	309·4	310·1	310·2	310·0	309·6	308·8	307·8	306·5	305·2	303·8	302·5	301·4	300·5
	Ven. ...	27·2	39·3	51·3	63·3	74·8	86·5	97·9	109·8	121·3	132·5	141·8	150·2	158·9	166·0	171·0	173·6	172·1	166·7
	Sat. ...	51·3	52·4	53·6	54·8	56·1	57·4	58·7	60·0	61·3	62·7	63·9	65·0	66·3	67·3	68·2	69·1	69·4	69·8
1856	Mars ...	166·0	163·3	161·4	160·9	161·5	163·5	166·3	169·5	173·8	178·5	183·6	189·1	194·7	200·8	207·0	213·4	220·1	227·0
⊙'s L.	Merc. ...	346·2	4·7	23·5	41·7	57·8	69·5	73·8	68·2	62·8	68·7	79·6	95·5	113·4	131·6	149·6	166·0	179·9	188·5
+·6	Jup. ...	330·9	333·2	335·2	337·4	339·4	341·1	342·8	344·0	345·0	345·3	345·6	346·4	346·1	345·4	344·5	343·3	342·0	340·8
	Ven. ...	333·1	345·4	357·8	10·0	22·2	34·2	46·6	58·9	71·0	83·3	95·5	107·8	120·0	132·3	144·6	156·9	169·4	181·6
	Sat. ...	64·4	65·5	66·5	67·5	68·8	70·1	71·3	72·6	73·9	75·2	76·5	77·8	79·2	80·2	81·3	82·2	82·9	83·5
1857	Mars ...	14·0	21·3	28·4	35·7	42·7	49·6	56·7	63·5	70·4	77·0	83·6	90·1	96·5	103·1	109·5	115·9	122·2	128·3
⊙'s L.	Merc. ...	0·8	18·7	35·0	48·2	54·3	50·4	43·7	46·6	57·6	72·9	90·7	109·3	127·4	144·8	160·0	170·3	172·8	166·0
+·4	Jup. ...	358·5	0·9	3·3	5·7	8·0	10·3	12·5	14·6	16·3	18·1	19·7	20·9	21·9	22·5	22·7	22·7	22·3	21·6
	Ven. ...	35·7	37·6	35·1	29·0	23·2	20·2	21·5	25·5	32·1	40·3	49·7	59·4	69·9	80·9	92·1	103·6	115·3	127·2
	Sat. ...	77·8	78·5	79·2	80·1	81·2	82·4	83·5	84·4	86·1	87·5	88·8	90·1	91·4	92·6	93·7	94·9	95·7	96·6
1858	Mars ...	220·2	219·6	217·9	215·2	211·7	209·0	206·8	206·2	206·4	208·2	210·9	214·3	218·8	223·6	229·0	234·8	240·7	247·2
⊙'s L.	Merc. ...	12·6	26·6	34·6	32·8	25·4	25·8	35·6	50·5	67·3	86·5	105·0	122·8	139·0	151·2	153·6	151·8	145·2	147·4
+·1	Jup. ...	26·1	28·4	30·8	33·2	35·6	38·0	40·3	42·6	44·9	47·2	49·2	51·1	52·9	54·5	55·8	56·9	57·7	58·2
	Ven. ...	9·6	22·0	34·2	46·8	58·9	71·1	82·9	95·0	106·9	118·7	130·7	142·4	153·9	165·6	177·0	188·2	198·9	209·3
	Sat. ...	91.8	92·3	92·8	93·3	94·4	95·4	96·4	97·6	98·8	100·1	101·4	102·7	104·1	105·4	106·6	107·8	108·8	109·7
Eng. date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1859	Mars ...	29·0	35·8	43·0	49·8	56·6	63·3	70·0	76·6	83·3	89·8	96·4	102·7	109·2	115·6	122·2	128·5	134·3	141·1
⊙'s L.	Merc. ...	14·6	13·6	6·9	6·1	14·7	29·1	45·9	65·2	83·7	102·2	118·9	132·2	139·0	136·2	128·9	129·4	138·8	153·0
+·8	Jup. ...	54·2	56·0	58·1	60·2	62·3	64·6	66·9	69·3	71·7	74·0	76·2	78·5	80·7	82·7	84·6	86·4	88·0	89·3
	Ven ...	317·7	329·6	341·4	353·4	5·3	17·2	29·2	41·2	53·1	65·4	77·7	89·9	101·8	114·1	126·4	138·6	151·0	163·4
	Sat. ...	105·6	105·9	106·1	106·5	107·2	108·0	108·8	110·0	111·2	112·4	113·7	115·0	116·2	117·5	118·8	120·0	121·2	122·3

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

mean Sunrise for every ten days from A.D. 1850 to A.D. 1859.

180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
174·4	184·3	194·1	204·0	213·8	223·7	233·5	243·4	253·3		263·1	273·0	282·8	292·7	302·5	312·4	322·2	332·1	342·0	351·8
−2·2	−2·1	−1·9	−1·7	−1·5	−1·2	−0·9	−0·5	−0·1		+0·3	+0·6	+1·0	+1·3	+1·6	+1·8	+2·0	+2·1	+2·2	+2·2
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 6,7	16, 17	26, 27	Ap 5,6
Pur	Aipp	Aipp	Aipp	Kart	Kart	Kart	Marg	Marg		Marg	Tai	Tai	Tai	Masi	Masi	Masi	Pang	Pang	Pang
25	4	14	24	4	14	24	5	15		25	5	15	25	6	16	26	6	16	26
188·7	195·6	202·5	209·3	216·4	223·4	230·8	238·0	245·3	**51**	252·7	260·3	267·9	275·5	282·9	290·9	298·7	306·6	314·3	322·1
171·2	168·8	175·6	188·3	204·1	221·3	238·4	255·4	270·3		281·1	284·8	278·5	273·1	276·9	288·4	303·9	321·8	340·3	358·6
164·0	166·2	168·3	170·4	172·3	174·0	175·7	177·3	178·5		179·6	180·4	180·9	181·1	180·7	180·2	179·5	178·6	177·4	176·1
219·2	228·9	237·0	243·9	248·3	247·7	246·4	239·9	234·9		233·8	236·0	241·3	248·7	256·5	266·9	277·3	288·1	299·2	310·5
355·5	354·7	353·9	353·1	352·6	352·1	351·7	351·8	351·9		351·9	352·5	353·1	353·8	354·8	355·9	357·0	358·2	359·5	0·8
90·3	95·3	99·9	104·2	107·9	110·6	112·9	113·7	113·7	**52**	112·3	109·7	106·4	102·3	98·7	96·1	95·0	95·0	96·5	98·2
156·4	168·0	183·2	200·2	217·6	234·5	250·1	262·4	268·2		264·7	257·3	258·3	268·0	282·3	299·5	317·5	335·9	353·5	9·2
189·1	190·2	191·7	193·4	194·9	196·5	198·1	199·3	200·6		201·9	202·9	204·0	204·8	205·4	205·9	206·3	206·6	206·5	206·5
174·2	186·7	199·2	211·7	224·1	236·9	249·4	262·1	274·7		287·1	299·7	312·0	324·4	336·6	348·8	0·8	12·5	24·4	35·7
10·4	9·6	8·7	7·8	7·2	6·6	6·0	5·8	5·6		5·4	5·7	6·1	6·5	7·4	8·3	9·3	10·4	11·5	12·7
202·7	209·7	216·6	223·9	231·0	238·4	245·8	253·2	260·8	**53**	268·4	276·2	284·0	291·9	299·7	307·7	315·6	323·4	331·3	339·0
164·0	180·9	198·4	215·5	231·3	244·7	252·0	250·2	242·1		240·2	249·7	263·1	279·5	297·6	315·4	333·0	348·7	0·7	5·3
211·3	213·4	215·5	217·7	219·9	222·1	224·3	226·6	228·8		231·0	233·0	235·0	236·7	238·3	240·8	240·8	241·9	242·6	242·9
127·2	138·1	149·1	160·2	171·9	183·9	195·9	208·1	220·4		232·6	244·9	257·5	269·9	282·4	295·0	307·4	319·6	332·2	344·6
25·6	24·8	24·0	23·2	22·4	21·6	20·9	20·4	20·0		19·6	19·7	19·8	19·9	20·7	21·5	22·3	23·3	24·3	25·3
107·4	113·2	118·5	123·7	128·5	133·2	137·2	140·8	143·4	**54**	145·5	146·2	146·0	144·1	141·0	137·4	133·7	130·4	128·1	127·0
177·2	194·6	211·1	225·4	234·9	236·0	228·7	224·9	220·4		242·6	258·2	275·5	293·6	310·8	327·2	340·2	346·6	343·2	336·1
236·9	238·7	240·7	242·5	244·6	246·7	248·8	251·1	253·4		255·7	258·0	260·2	262·5	264·6	266·6	268·6	270·4	271·9	273·3
209·6	222·4	234·4	246·0	257·7	268·8	278·8	290·6	300·2		309·3	317·0	322·8	325·8	324·7	320·3	315·3	310·8	310·7	314·0
40·8	40·2	39·6	38·9	38·1	37·3	36·4	35·7	35·0		34·4	34·2	34·0	33·8	34·2	34·6	35·1	36·0	37·0	38·0
217·1	224·1	231·2	238·6	246·1	253·3	261·1	268·7	276·3	**55**	284·3	292·0	299·9	307·9	315·7	323·5	331·4	339·1	346·9	354·5
190·3	205·6	217·0	221·2	215·8	209·2	212·0	222·5	237·2		254·2	271·8	289·2	305·6	319·5	327·9	327·0	319·3	318·3	326·6
265·9	266·7	267·9	269·4	271·0	272·8	274·9	277·1	279·2		281·5	283·8	286·2	288·4	290.7	293·1	295·4	297·6	299·6	301·8
156·0	168·3	180·7	193·3	205·7	218·5	230·9	243·6	256·3		268·8	281·7	294·2	306·8	319·2	331·7	344·2	356·7	9·0	21·2
56·0	55·5	55·1	54·5	53·5	52·6	51·7	51·1	50·5		49·8	49·4	48·9	48·6	48·8	48·9	49·0	49·7	50·5	51·1
121·5	127·2	133·0	138·9	144·3	149·9	154·1	159·5	164·2	**56**	168·5	172·4	175·3	177·6	179·0	179·3	178·0	175·2	172·0	168·6
198·3	205·3	202·6	195·1	194·6	203·2	217·0	233·1	249·3		268·0	284·7	299·0	309·0	310·6	303·4	299·8	306·2	318·9	335·3
299·9	299·6	299·9	300·4	301·0	302·0	303·3	305·0	306·9		308·7	310·7	313·0	315·3	317·6	320·0	322·4	324·9	327·3	329·6
160·2	157·3	157·7	161·8	168·1	176·2	185·6	195·7	206·4		217·6	226·0	240·8	252·9	264·8	277·0	289·2	301·5	313·5	325·6
70·2	69·9	69·7	69·5	68·6	67·6	66·8	66·2	65·7		65·1	64·4	63·8	63·1	63·0	62·8	62·7	63·1	63·6	63·9
233·9	241·1	248·3	255·6	263·0	270·8	278·2	285·9	293·6	**57**	301·3	309·1	317·0	324·7	332·6	340·1	347·8	355·3	2·7	10·3
188·0	180·5	178·1	185·2	198·1	214·0	231·1	248·6	265·1		280·0	291·0	294·0	287·7	282·6	287·0	298·7	314·5	332·6	351·0
339·5	338·2	337·1	336·3	335·9	335·7	336·1	336·6	337·5		338·7	340·1	341·9	343·8	345·9	348·0	350·2	352·6	355·0	357·4
194·3	206·5	218·9	231·4	243·5	255·6	268·4	270·5	292·7		304·5	316·5	328·3	339·6	350·5	1·1	9·9	19·6	27·9	[illegible]
84·2	84·3	84·5	84·5	84·0	83·4	82·8	82·0	81·2		80·5	79·7	79·0	78·1	77·8	77·4	77·0	77·3	77·6	77·8
134·5	140·6	146·7	152·8	158·6	164·6	170·2	175·8	181·4	**58**	186·8	192·1	197·2	202·0	206·3	210·3	213·8	216·8	218·8	219·8
161·5	166·2	177·9	193·2	210·5	227·5	244·3	259·9	272·3		277·7	273·9	266·4	268·1	278·5	292·7	310·1	328·2	346·2	4·4
20·6	19·4	18·2	16·8	15·4	14·3	13·3	12·6	11·7		11·8	12·6	13·3	14·3	15·6	17·2	18·9	20·8	22·8	25·0
139·2	151·3	163·3	175·5	188·0	200·3	212·7	225·5	237·9		250·3	263·0	275·7	288·3	300·8	312·0	325·9	338·5	351·0	3·4
97·4	97·8	98·1	98·4	98·2	98·1	97·8	97·2	96·5		95·8	95·0	94·1	93·2	92·9	92·6	92·3	91·9	91·5	91·0
253·7	260·7	266·6	274·6	282·0	289·2	296·7	304·2	311·7	**59**	319·3	326·6	334·0	341·0	348·7	356·2	3·3	10·7	17·6	24·7
157·9	172·4	189·2	206·7	223·7	239·7	253·2	260·9	259·6		251·9	250·3	258·2	271·7	288·1	306·0	324·1	342·0	358·1	10·6
58·3	57·9	57·9	56·2	55·4	55·2	52·8	51·4	50·3		49·1	48·3	47·9	47·6	48·0	48·4	49·2	50·3	51·6	53·2
219·1	228·6	236·1	242·6	245·9	246·1	242·2	236·4	231·5		231·1	234·3	240·1	248·2	257·2	267·0	277·3	288·4	299·7	310·8
110·8	111·5	112·1	112·8	112·8	112·9	112·9	112·4	111·8		111·3	110·5	109·8	109·0	108·2	107·4	106·7	106·4	106·1	105·6
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
147·2	153·6	159·7	166·1	172·2	178·3	184·5	190·7	196·8	**60**	202·9	209·1	215·0	221·1	226·9	232·9	238·5	244·1	249·6	254·8
169·5	187·2	204·5	221·0	235·0	244·2	244·8	237·2	234·1		239·9	252·5	268·3	285·9	303·9	321·4	337·6	350·8	357·1	353·4
90·5	91·3	91·9	92·1	92·0	91·6	90·8	89·7	88·5		87·2	85·9	84·7	83·5	82·6	82·0	81·5	81·2	81·1	82·5
176·1	188·4	200·9	213·4	226·0	238·6	251·0	264·0	276·1		288·9	301·5	313·8	326·1	338·1	350·3	2·3	14·0	25·9	37·4
123·5	124·2	125·0	125·8	126·1	126·3	126·7	126·4	126·2		125·8	125·1	124·3	123·7	122·9	122·2	121·3	120·7	120·2	119·6

Mag.	P. Phal.	U. Phal.	Hasta.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P. Ash.	U. Ash.	Srav.	Dan.	Satab.	P. Bhad.	U. Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
⊙'s Mean Long.	357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.	+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Jl 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1860 Mars	257·4	262·2	266·6	270·4	274·1	276·6	278·3	279·0	278·2	276·5	274·0	271·4	269·5	269·0	269·7	271·6	274·6	278·8
⊙'s L. Merc.	348·8	346·4	353·2	6·5	23·2	41·9	60·8	79·4	96·7	111·4	120·3	120·1	112·6	110·8	118·7	132·0	148·4	166·0
+·6 Jup.	83·0	84·1	85·5	87·0	88·8	90·7	92·7	94·9	97·0	99·3	101·6	103·7	106·0	108·3	109·9	112·7	114·6	116·5
Ven.	42·9	54·1	64·4	74·5	83·6	92·1	98·2	102·9	103·8	100·7	94·4	88·3	86·5	87·7	92·4	99·2	107·7	117·0
Sat.	119·4	119·5	119·6	119·5	119·5	120·1	120·6	121·2	122·3	123·3	124·3	125·5	126·7	127·9	129·2	130·5	131·8	133·0
1861 Mars	43·2	49·8	55·4	62·9	69·5	75·9	82·4	88·7	95·3	101·7	108·0	114·5	120·7	127·1	133·7	139·8	146·2	152·6
⊙'s L. Merc.	332·1	344·0	0·2	18·3	37·2	56·4	74·2	89·7	100·4	102·8	96·1	92·1	98·4	110·5	126·7	144·2	162·1	179·3
+·3 Jup.	113·6	113·8	114·2	114·9	115·9	117·1	118·5	120·8	122·1	123·9	126·0	128·1	130·3	132·5	134·6	136·8	139·1	141·3
Ven.	351·2	3·7	16·0	28·5	40·7	53·1	65·2	77·6	89·6	101·9	114·3	126·4	138·5	150·7	162·7	174·8	186·9	199·1
Sat.	133·4	133·1	132·9	132·6	132·8	133·2	133·5	134·4	135·2	136·0	137·1	138·2	139·3	140·5	141·7	143·0	144·3	145·6
1862 Mars	281·6	288·2	294·9	301·5	308·0	314·4	320·7	326·7	332·3	337·6	342·4	346·4	349·5	351·5	352·4	351·9	349·9	347·1
⊙'s L. Merc.	337·5	355·3	14·0	32·9	51·2	67·5	79·7	84·6	79·4	73·6	77·8	89·3	104·6	122·2	140·3	158·1	174·7	188·7
+·1 Jup.	146·5	145·5	144·9	144·5	144·5	144·8	145·4	146·4	147·7	149·0	150·6	152·3	154·3	156·2	158·3	160·5	162·6	164·8
Ven.	316·6	324·1	332·7	342·6	352·7	3·4	14·5	25·7	37·2	48·8	60·6	72·4	84·3	96·1	108·3	120·5	132·6	144·9
Sat.	147·0	146·5	146·1	145·5	145·6	145·6	145·7	146·4	147·0	147·6	148·5	149·5	150·4	151·6	152·8	154·0	155·2	156·4
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1863 Mars	58·4	64·5	70·6	76·7	82·9	89·1	95·3	101·6	107·8	114·1	120·3	126·7	133·0	139·3	145·7	152·1	158·5	165·2
⊙'s L. Merc.	352·8	11·5	29·5	46·3	59·4	65·5	61·4	54·9	57·3	68·7	84·1	101·7	120·0	138·2	155·3	170·0	180·2	182·1
+·8 Jup.	179·9	178·6	177·4	176·2	175·4	174·7	174·5	174·6	174·8	175·5	176·4	177·6	179·1	180·7	182·5	184·4	186·4	188·4
Ven.	29·0	40·9	52·9	64·8	75·9	87·9	99·4	110·5	121·5	131·6	141·6	150·9	159·2	165·5	169·9	171·1	167·8	161·6
Sat.	160·3	159·7	159·0	158·4	158·2	158·2	157·9	158·3	158·8	159·1	160·0	160·8	161·6	162·7	163·9	164·9	166·1	167·3
Eng. date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1864 Mars	301·6	309·1	316·7	324·0	331·6	338·0	346·1	353·3	0·2	7·2	13·7	20·0	26·0	31·9	37·3	42·2	46·4	50·1
⊙'s L. Merc.	6·7	24·0	37·8	45·8	44·0	36·5	37·0	46·8	61·7	79·0	97·5	115·9	133·5	149·4	161·5	166·3	161·4	154·7
+·6 Jup.	214·0	213·0	211·8	210·5	209·2	208·0	206·9	206·3	205·4	204·9	204·9	205·2	205·9	206·8	208·1	209·5	211·1	212·9
Ven.	333·7	346·0	358·3	10·5	23·2	35·0	47·3	58·3	71·6	83·7	96·1	108·8	120·8	132·9	145·3	157·5	170·0	182·2
Sat.	173·5	172·7	171·9	171·2	170·8	170·6	170·1	170·2	170·4	170·5	171·2	171·8	172·6	173·7	174·9	176·1	177·1	178·1
1865 Mars	73·9	79·3	84·8	90·5	96·1	102·0	108·0	113·9	119·7	126·0	132·1	138·5	144·8	151·2	157·5	164·0	170·5	177·0
⊙'s L. Merc.	16·2	25·5	25·8	18·4	18·6	24·6	38·6	56·0	74·3	93·1	111·3	128·0	141·7	148·8	146·5	138·9	138·9	147·6
+·3 Jup.	246·9	246·8	246·3	245·7	244·8	243·6	242·3	241·0	239·8	238·6	237·5	236·8	236·4	236·4	236·7	237·2	238·1	239·4
Ven.	33·9	35·2	32·0	25·2	19·8	18·0	20·1	24·8	31·7	40·1	49·7	59·6	70·4	81·2	92·5	104·0	115·9	127·6
Sat.	186·3	185·5	184·8	184·0	183·4	182·9	182·2	182·2	182·1	182·1	182·5	183·0	183·4	184·3	185·1	186·1	187·2	188·3
1866 Mars	319·4	327·7	334·9	342·5	350·3	357·7	5·2	12·4	19·8	26·7	33·7	40·7	47·3	53·8	60·0	66·0	71·7	77·1
⊙'s L. Merc.	8·2	1·0	357·0	3·0	15·8	32·7	51·0	69·0	88·7	106·0	120·7	130·1	130·7	123·1	120·7	127·6	140·8	157·0
+·0 Jup.	277·7	278·7	279·5	280·0	280·1	279·8	279·2	278·3	277·1	275·9	274·7	273·3	272·1	271·0	270·2	269·6	269·5	269·6
Ven.	10·1	22·4	34·7	47·0	59·3	71·5	83·4	95·4	107·2	119·2	131·2	142·7	154·4	165·9	177·3	188·3	199·0	209·4
Sat.	198·7	197·9	197·2	196·3	195·6	194·9	194·3	194·0	193·6	193·4	193·6	193·9	194·2	194·9	195·6	196·3	197·3	198·4
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1867 Mars	92·1	96·4	100·9	105·9	111·1	116·4	121·9	127·5	133·5	139·3	145·4	151·5	157·9	164·2	170·7	177·1	183·9	190·5
⊙'s L. Merc.	338·4	343·0	354·9	11·3	29·6	48·8	67·4	85·3	100·4	111·3	113·4	106·4	102·9	108·6	121·3	137·2	154·7	172·4
+·8 Jup.	306·8	308·8	310·4	311·8	313·1	314·1	314·7	315·0	314·9	314·5	313·8	312·8	311·6	310·3	308·9	307·6	306·3	305·0
Ven.	318·3	330·0	342·0	353·8	5·9	17·8	29·8	41·8	53·7	66·0	78·9	91·6	102·4	115·7	127·0	139·4	151·8	164·0
Sat.	210·8	210·0	209·2	208·5	207·7	207·0	206·3	205·8	205·4	204·9	205·0	205·0	205·1	205·4	205·6	205·8	207·1	208·5
Eng. date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1868 Mars	336·8	344·4	352·3	359·8	7·3	14·9	22·2	29·5	36·8	43·8	50·8	57·5	64·4	70·8	77·3	83·5	89·6	95·6
⊙'s L. Merc.	333·2	348·3	6·2	25·2	44·1	62·4	78·5	90·7	95·3	90·1	84·3	88·3	99·9	115·4	132·8	150·7	168·4	184·8
+·5 Jup.	334·9	337·2	339·3	341·6	343·5	345·4	347·0	348·5	349·6	350·5	351·1	351·3	351·2	350·6	349·7	348·7	347·5	346·2
Ven.	43·2	53·9	64·5	74·4	83·4	91·4	97·5	100·0	101·7	97·3	91·0	85·7	83·8	87·1	91·5	98·9	107·4	117·3
Sat.	222·3	221·7	221·0	220·5	219·7	219·0	218·3	217·6	217·0	216·4	216·3	216·1	216·0	216·3	216·7	217·1	218·0	218·8
1869 Mars	115·2	117·3	120·2	123·5	127·8	132·1	137·0	142·3	147·6	153·4	159·2	165·6	171·5	177·8	184·3	190·8	197·4	204·3
⊙'s L. Merc.	344·2	1·8	20·7	39·1	56·0	69·8	76·4	73·0	66·0	68·2	78·4	93·2	111·7	128·9	146·9	164·0	179·0	189·1
+·3 Jup.	2·4	4·8	7·2	9·7	12·8	14·3	16·5	18·6	20·4	22·4	23·9	25·2	26·5	27·2	27·6	27·4	27·0	26·9
Ven.	351·8	4·3	16·8	29·1	41·2	53·7	65·8	78·1	90·2	102·5	114·7	127·0	139·1	151·1	163·4	175·4	187·5	199·5
Sat.	234·0	233·4	232·9	232·3	231·4	230·6	229·8	229·2	228·6	227·9	227·6	227·2	227·0	227·1	227·3	227·6	228·2	228·9

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

XVIII.

mean Sunrise for every ten days from A.D. 1860 to A.D. 1869.

	180	190	200	210	220	230	240	250	260
	174·4	184·3	194·1	204·0	213·8	223·7	233·5	243·4	253·3
	−2·2	−2·1	−1·9	−1·7	−1·5	−1·2	−0·9	−0·5	−0·1
	O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27
	Pur 25	Aipp 4	Aipp 14	Aipp 24	Kart 4	Kart 14	Kart 24	Marg 5	Marg 15
61	283·3	288·7	294·3	300·3	306·5	312·9	319·5	325·9	332·7
	183·6	200·6	215·4	226·5	229·9	224·5	218·2	221·5	232·2
	118·4	120·6	121·4	122·6	123·5	124·2	124·3	124·3	123·7
	126·3	138·0	149·2	160·3	172·4	184·2	196·0	208·2	220·5
	134·1	135·3	136·3	137·2	138·2	139·0	139·9	139·7	139·6
62	159·2	165 4	171·8	178·3	184·7	191·3	197·8	204·3	210·9
	195·5	208·1	215·3	211·2	203·7	203·9	212·8	226·5	243·2
	143·5	145·5	147·3	149·2	150·8	152·1	153·3	154·2	154·7
	211·1	222·9	234·7	246·5	257·7	268·9	279·9	290·3	300·1
	146·9	147·9	149·0	150·0	150·7	151·5	152·1	152·3	152·6
63	344·6	343·0	342·1	342·6	345·4	347·8	350·5	354·3	358·7
	197·7	197·4	189·7	187·1	193·3	206·6	222·0	239·4	256·9
	167·1	169·2	171·3	173·5	175·4	177·4	179·1	180·6	181·9
	157·4	169·5	181·9	194·4	206·9	219·7	232·0	244·8	257·6
	157·7	158·9	160·1	161 3	162·0	163·0	163·9	164·3	164·8
	O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28
64	171·6	178·2	184·7	191·3	198·1	204·8	211·6	218·6	225·4
	175·1	170·8	176·0	187·8	203·1	219·1	237·5	254·4	269·9
	190·6	192·7	194·9	197·2	199·4	201·5	203·6	205·6	207·4
	156·3	154·6	156·2	161·1	168·2	177·0	186·5	196·9	207·8
	168·6	169·8	171·0	172·3	173·2	174·2	175·1	175·7	176·2
	O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27
65	52·6	54·4	55·0	54·0	52·1	49·1	45·6	42·9	41·2
	157·5	168·0	182·5	199·2	216·6	233·8	249·6	262·9	270·4
	214·9	216·8	218·8	221·1	223·3	225·5	227·7	230·0	232·2
	194·9	207·3	219·5	231·8	244·1	256·5	268·7	281·1	293.1
	179·1	180·3	181·5	182·7	183·8	184·9	185·9	186·7	187·4
66	183·8	190·5	197·3	204·3	211·1	218·1	225·1	232·3	239·6
	161·6	178·2	195·7	213·0	229·4	243·5	252·8	254·1	246·7
	240·8	242 4	244·1	246·0	248·0	250·1	252·4	254·7	257·0
	139·8	151·7	163·9	176·1	188·4	200·9	213·3	226·0	238·3
	189·2	190·6	191·8	192·9	194·0	195·2	196·3	197·2	198·0
67	82·4	86·9	90·8	94·4	97·2	99·0	99·8	99·3	97·7
	174·3	191·9	208·5	223·9	235·1	239·0	233·5	227·2	230·1
	270·0	271·0	272·1	273·4	275·0	276·8	278·6	280·8	282·9
	219·0	227·9	235·2	242·1	244·0	243·2	238·5	232·2	228·7
	199·4	200·6	201·8	202·9	204·0	205·1	206·3	207·2	208·4
	O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28
68	197·2	204·2	211·2	218·3	225·3	232·7	240·0	247·4	254·8
	189·4	205·5	217·7	223·6	219·8	212·3	213·2	222·9	236·6
	304·7	304·5	304·5	304·9	305·5	306·5	307·7	309·3	311·1
	176·7	189·0	201·7	214·0	226·7	239·2	251·8	264·4	277·1
	209·5	210·6	211·7	212·3	214·1	215·3	216·5	217·4	218·6
	O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27
69	101·2	106 8	111·9	116·8	121·3	125·4	128·7	131·4	133·2
	198·4	207·0	206·1	198·5	196·4	203·5	216·3	232·1	249·6
	344·7	343·5	342·5	341·6	340·9	340·8	340·9	341·2	342·2
	127·2	138·3	149·3	161·0	172·7	184·7	196·7	208·9	221·3
	219·6	220·6	221·6	222·7	223·9	225·1	226·2	227·3	228·3
70	211·1	218·2	225·3	232·6	239·9	247·2	255·0	262·6	270·2
	191·6	185·0	180·2	184·7	196·3	211·6	228·5	245·8	262·8
	26·0	24·9	23·6	22·3	21·0	19·9	18·8	18·1	17·5
	211·4	223·3	235·1	246·9	258·2	269·3	280·1	290·1	299·9
	229·4	230·4	231.4	232·4	233·5	234·6	235·8	236·9	238·0

	270	280	290	300	310	320	330	340	350	360
	263·1	273·0	282·8	292·7	302·5	312·4	322·2	332·1	342·0	351·8
	+0·3	+0·6	+1·0	+1·3	+1·6	+1·8	+2·0	+2·1	+2·2	+2·2
	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
	Marg 25	Tai 5	Tai 15	Tai 25	Masi 6	Masi 16	Masi 26	Pang 6	Pang 16	Pang 26
61	339·3	346·2	353·0	359·8	6·4	13·3	19·9	26·7	33·3	39·7
	247·3	264·4	282 0	299·6	316·2	330·0	338·0	337·3	329·7	328·7
	123·1	122·6	121·1	119·8	118·5	117·2	116·0	115·1	114·4	113·8
	232·9	245·4	257·8	270·4	282·7	295·8	307·7	320·1	332·7	344·9
	139·7	139·1	138·6	138 0	137·2	136·4	135·6	134·9	134·2	133·5
62	217·5	224·2	230·7	237·4	244·0	250·9	257·7	264·5	271·3	278·5
	260·6	278·2	294·7	309·4	319·1	320·5	312·1	309·6	316·7	329·6
	155·1	155·1	154·7	154·0	153·1	151·9	150·9	149·8	148·1	147·0
	308·8	315·9	321·3	323·1	321·3	315·5	310·2	307·5	308·9	312·0
	152·8	152·6	152·3	151·9	151·2	150·4	149·7	148·9	148·2	147·4
63	3·6	8·4	14·0	19·4	24·9	30·8	36·7	42·9	48·3	54·7
	273·6	288·8	300·1	303·8	297·8	292·5	296·2	307·8	323·7	341·5
	183 2	184·1	184·8	185·1	185·1	184·7	184·0	183·1	182·0	180·8
	270·1	282·7	295·4	308·0	320·4	332·9	345·6	357·9	10·2	22·2
	165·2	165·0	164·9	164·8	164·3	163·7	163·1	162·3	161·6	160·8
	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
64	232·5	239·5	246·6	253·8	261·0	268·8	275·7	283·1	290·4	297·9
	282·0	287·3	282·7	275·9	278·0	288·4	303·2	320·8	339·2	357·7
	209·3	210·9	212·3	213·5	214·5	215·0	215·6	215·5	215·1	214·5
	218·9	230·6	242·3	254·4	266·9	278·7	290·7	303·0	315·1	327·5
	176·9	177·0	177·2	177·3	176·8	176·4	175·9	175·2	174·5	173·7
	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
65	40·7	41·3	42·9	45·5	48·5	52·2	56·5	61·2	66·2	71·2
	268·9	260·7	259·9	268·3	282·0	298·6	316·8	335·0	353·0	9·0
	234·4	236·5	238·5	240·2	242·3	243·3	244·7	245·8	246·5	246·9
	304·9	316·9	328·5	340·0	350·8	1·3	10·5	19·2	27·1	32·4
	188·3	188·5	188·7	189·0	188·9	188·8	188·6	188·0	187·1	186·5
66	246·8	254·3	261·6	269·3	276·8	284·4	292·1	300·0	307·7	315·4
	242·9	248·7	261·2	277·0	294·4	312·6	330·2	347·1	0·5	7·7
	259·3	261·6	263·9	266·2	268·3	270·3	272·4	274·2	275·8	277·3
	251·0	263·6	276·3	289·0	301·4	314·1	326·7	339·1	351·6	4·0
	199·0	199·6	200·1	200·6	200·6	200·7	200·6	200·1	199·1	198·9
67	94·8	90·9	87·0	83·9	81·8	81·2	82·3	83·8	86·5	89·9
	240·7	255·6	272·8	290·7	308·3	325·0	339·4	348·2	347·9	340·3
	285·2	287·4	289·7	292·1	294·4	296·8	299·2	301·5	303·6	305·8
	229·2	232·9	239·2	247·6	256·7	266·9	277·3	288·2	299·7	311·1
	209·5	210·0	210·6	211·2	211·0	210·9	210·7	210·9	211·0	211·1
	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
68	262·5	270·1	277·9	285·5	293·4	301·2	309·2	317·1	324·9	332·7
	253 3	270·9	288·3	305·3	319·6	329·6	330·7	323·2	320·2	327·1
	313·0	314·8	317·0	319·3	321·6	324·0	326·5	328·8	331·1	333·7
	289·5	301·9	314·3	326·7	339·7	350·9	2·7	14·6	26·3	37·8
	219·6	220·5	221·3	222·1	222·4	222·8	223·1	222·9	222·8	222·6
	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
69	133·9	133·5	131·5	128·4	124·9	121·2	117·9	115·4	114·5	114·7
	267·0	283·9	299·1	310·2	313·7	307·4	301·6	306·6	318·5	334·5
	343·0	344·5	346·1	347·9	349·9	352·1	354·3	356·5	358·8	1·2
	233·4	245·8	258·3	270·9	283·4	296·0	308·4	320·8	333·2	345·6
	229·5	230·4	231·2	232·2	232·8	233·3	233·9	233·9	234·0	234·0
70	277·9	285·7	293·6	301·4	309·4	317·3	325·0	332·9	340·7	348·4
	278·5	291·1	296·7	292·7	294.3	296·1	306·4	321·1	338·0	348·2
	17·3	17·5	18·0	19·0	20·1	21·5	23·5	25·0	26·9	29·1
	308·4	314·5	319·6	320·8	317·7	311·6	306·6	304·9	306·9	311·8
	239·2	240·3	241·3	242·3	243·0	243·8	244·4	244·7	244·9	245·2

Mag.	P. Phal.	U. Phal.	Hasta.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P. Ash.	U. Ash.	Srav.	Dan.	Satab.	P.Bhad.	U. Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
⊙'s Mean L.		357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.		+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
Tamil month.		Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pura	Pura
Do. date.		1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1870	Mars ...	352·3	0·0	7·7	15·1	22·5	29·8	37·1	44·2	51·4	58·2	65·0	71·8	78·4	85·0	91·4	97·7	104·0	110·0
⊙'s L.	Merc. ...	357·5	14·8	33·3	47·7	56·5	55·7	48·2	47·5	56·4	71·0	88·2	106·3	124·7	142·4	158·3	170·4	175·7	171·0
+·0	Jup. ...	30·0	32·2	34·5	36·9	39·2	41·6	44·0	16·3	48·8	51·1	53·1	55·1	56·9	58·6	59·9	61·1	62·1	62·8
	Ven. ...	314·1	322·9	332·0	341·9	352·2	3·0	14·0	25·4	36·9	48·7	60·1	72·3	84·1	96·0	108·2	120·4	132·5	144·8
	Sat. ...	245·2	245·0	244·7	244·6	243·8	242·9	242·0	241·2	240·5	239·8	239·3	238·9	238·3	238·3	238·2	238·2	238·6	238·9
Eng. date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1871	Mars ...	148·6	147·1	147·0	148·2	150·1	152·9	156·7	160·8	165·6	170·6	176·0	181·8	187·6	193·8	200·2	206·7	213·4	220·4
⊙'s L.	Merc. ...	12·1	27·1	36·5	36·8	29·2	27·7	35·7	50·0	66·9	85·5	103·9	122·0	138·7	151·8	158·6	155·9	148·4	148·8
+·7	Jup. ...	58·0	59·9	61·8	63·8	66·0	68·1	70·4	72·8	75·2	77·5	79·8	82·0	84·3	86·4	88·3	90·2	91·9	93·3
	Ven. ...	29·5	41·5	53·2	65·3	77·0	88·4	99·8	110·8	121·3	131·9	141·5	150·6	158·5	164·4	168·0	168·6	164·3	158·1
	Sat. ...	256·3	256·0	255·8	255·6	255·4	255·1	254·9	253·7	252·6	251·4	250·8	250·3	249·7	249·5	249·4	249·2	249·5	249·7
Eng. date.		Ap 11	Ap 21	My 1	My11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1872	Mars ...	8·1	15·5	23·0	30·2	37·5	44·5	51·5	58·4	65·3	72·1	78·8	85·4	92·0	98·4	104·8	111·1	117·5	123·6
⊙'s L.	Merc. ...	14·2	18·3	11·8	8·0	14·1	27·4	43·9	62·4	81·2	99·6	116·8	131·3	140·7	140·6	133·0	130·7	138·1	151·1
+·5	Jup. ...	87·1	88·1	89·3	90·7	92·4	94·3	96·2	98·3	100·4	102·6	104·8	107·0	109·3	111·7	113·9	116·1	118·2	120·1
	Ven. ...	334·2	346·5	358·7	11·0	23·1	35·3	47·6	59·8	72·1	84·4	96·6	108·8	121·3	133·4	145·8	158·0	170·5	182·9
	Sat. ...	267·2	267·2	267·3	267·2	266·7	266·0	265·6	264·9	264·2	263·5	262·8	262·2	261·4	261·0	260·5	260·2	260·3	260·5
1873	Mars ...	199·5	196·6	193·3	190·0	187·7	186·7	186·8	188·3	190·9	194·2	198·2	202·7	208·0	213·5	219·5	225·5	231·9	238·7
⊙'s L.	Merc. ...	354·8	348·9	352·8	4·9	20·7	38·9	57·9	76·8	94·4	110·1	121·1	123·9	117·4	112·8	118·1	130·0	145·9	163·0
+·2	Jup. ...	118·8	118·2	118·3	118·9	119·7	120·8	122·2	123·8	125·5	127·3	129·3	131·5	133·5	135·8	138·0	140·0	142·4	144·5
	Ven. ...	32·2	32·3	28·3	22·0	16·7	15·7	18·6	24·1	31·2	40·0	49·6	59·9	70·4	81·4	92·8	104·3	116·2	128·1
	Sat. ..	278·0	278·3	278·5	278·7	278·3	278·0	277·7	277·1	276·4	275·7	274·3	273·0	271·5	271·6	271·7	271·7	271·7	271·6
1874	Mars ...	22·8	29·8	36·8	43·9	50·8	57·7	64·4	71·1	78·1	84·4	91·0	97·5	103·9	110·4	116·8	123·1	129·5	135·8
⊙'s L.	Merc. ...	332·7	342·6	357·8	15·7	34·4	53·4	71·4	87·2	100·8	106·2	101·3	95·1	98·3	109·1	124·3	141·5	159·4	176·9
+·0	Jup. ...	150·9	149·9	149·2	148·7	148·6	148·7	149·4	150·2	151·3	152·5	154·0	156·0	157·7	159·5	161·6	163·8	165·9	168·1
	Ven. ...	10·7	23·0	35·3	47·6	59·9	72·0	84·0	96·1	107·7	119·6	131·6	143.1	154·8	166·5	177·5	188·5	199·0	209·2
	Sat. ...	288·8	289·2	289·7	290·1	290·0	289·8	289·8	289·3	288·7	288·2	287·4	286·7	285·8	285·1	284·4	283·8	283·5	283·4
Eng. date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1875	Mars ...	245·1	248·5	251·2	252·7	253·1	252·7	251·3	248·7	246·4	243·6	242·1	243·4	243·7	246·1	249·7	253·8	258·9	264·2
⊙'s L.	Merc. ...	337·1	354·3	13·0	31·5	50·2	67·1	80·8	87·4	83·8	76·9	78·7	89·1	104·0	121·2	139·5	157·3	174·1	188·7
+·7	Jup. ...	184·7	183·3	182·1	180·9	180·0	179·3	178·8	178·7	178·9	179·4	180·2	181·3	182·6	184·1	185·8	187·9	189·8	191·7
	Ven. ...	318·6	330·3	342·3	354·3	6·2	18·1	30·2	42·3	54·0	66·5	78·7	90·7	102·9	115·2	127·5	139·9	152·3	164·7
	Sat. ...	299·7	300·4	301·0	301·6	301·8	301·8	301·9	301·4	301·0	300·6	299·9	299·2	298·5	297·7	297·0	296·2	295·7	295·3
Eng. date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1876	Mars ...	27·6	44·4	51·1	57·9	64·4	71·0	77·6	84·2	90·6	97·1	103·5	109·9	116·3	122·6	129·1	135·3	141·7	148·0
⊙'s L.	Merc. ...	349·8	7·4	27·1	44·7	58·9	67·7	66·6	59·0	58·6	67·8	81·9	98·9	117·2	135·3	152·8	168·5	180·4	185·1
+·5	Jup. ...	218·7	217·8	216·6	215·3	214·1	212·8	211·6	210·6	209·9	209·4	209·2	209·4	209·9	210·8	211·8	213·8	214·6	216·4
	Ven. ...	43·4	54·4	64·7	74·2	83·1	90·6	96·6	99·3	98·8	93·8	87·4	82·5	81·8	84·8	90·9	98·5	107·4	117·0
	Sat. ...	310·6	311·6	312·5	313·6	313·8	313·8	314·1	313·9	313·8	313·5	312·9	312·2	311·6	310·8	310·1	309·2	308·6	308·1
1877	Mars ...	272·8	279·0	285·3	291·1	296·9	302·2	307·5	312·1	316·5	319·8	322·4	323·8	323·3	322·1	319·8	317·2	314·9	314·0
⊙'s L.	Merc. ...	3·5	21·6	36·8	47·1	48·5	41.1	38·5	45·9	59·4	76·3	94·3	113·0	130·9	147·5	160·9	168·3	166·1	158·4
+·2	Jup. ...	251·3	251·5	251·1	250·6	249·8	248·7	247·4	246·1	244·7	243·5	242·5	241·7	241·0	240·8	241·1	241·4	242·1	243·1
	Ven. ...	352·5	5·0	17·3	29·4	42·0	54·2	66·3	78·6	90·8	102·8	115·2	127·5	139·6	151·6	163·8	175·7	187·8	200·0
	Sat. ...	321·7	322·6	323·6	324·5	325·2	325·8	326·5	326·5	326·6	326·6	326·1	325·7	325·1	324·4	323·7	322·9	322·1	321·4
1878	Mars ...	52·1	58·4	64·9	71·0	77·2	83·5	89·9	96·1	102·6	108·7	115·0	121·4	127·8	134·2	140·5	146·9	153·2	159·6
⊙'s L.	Marc. ...	14·7	26·2	29·6	23·4	18·8	24·2	36·9	53·3	71·5	90·2	108·7	125·8	140·6	150·0	150·9	143·7	140·5	146·9
−·1	Jup. ...	281·8	283·0	283·8	284·5	284·8	284·8	284·4	283·6	282·6	281·5	280·1	278·7	277·5	276·4	275·4	274·6	274·2	274·2
	Ven. ...	314·0	322·7	331·7	341·2	352·5	3·2	14·3	25·7	37·2	49·4	60·9	72·6	84·5	96·6	108·7	120·9	133·0	145·3
	Sat. ...	332·9	334·0	335·0	336·2	337·0	337·6	338·5	338·9	339·2	339·6	339·3	339·1	338·8	338·2	337·5	336·8	336·0	335·3
Eng. date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1879	Mars ...	294·5	301·5	308·7	316·1	323·4	330·5	337·4	344·2	350·9	357·5	3·6	9·5	14·9	20·1	24·4	28·0	30·9	32·3
⊙'s L.	Marc. ...	10·8	5·5	359·8	4·0	16·0	31·9	50·5	69·1	87·8	105·5	120·8	131·7	134·0	127·2	123·6	128·3	140·4	156·1
+·7	Jup. ...	310·8	312·7	314·5	316·0	317·4	318·5	319·4	319·9	319·9	319·7	319·3	318·4	317·2	316·0	314·6	313·2	312·1	310·7
	Ven. ...	29·9	41·9	53·7	65·7	77·2	88·8	100·0	111·2	121·7	131·9	141·5	150·2	157·5	163·2	165·4	165·2	160·5	154·7
	Sat. ...	344·4	345·6	346·8	348·1	349·1	349·9	351·0	351·5	352·1	352·6	353·0	353·3	353·7	352·7	352·0	351·1	350·3	349·6

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

mean Sunrise for every ten days from A.D. 1870 to A.D. 1879.

180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
174·4	184·3	194·1	204·0	213·8	223·7	233·5	243·4	253·3		263·1	273·0	282·8	292·7	302·5	312·4	322·2	332·1	342·0	351·8
−2·2	−2·1	−1·9	−1·7	−1·5	−1·2	−0·9	−0·5	−0·1		+0·3	+0·6	+1·0	+1·3	+1·6	+1·8	+2·0	+2·1	+2·2	+2·2
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
Pur	Aipp	Aipp	Aipp	Kart	Kart	Kart	Marg	Marg		Marg	Tai	Tai	Tai	Masi	Masi	Masi	Pang	Pang	Pang
25	4	14	24	4	14	24	5	15		25	5	15	25	6	16	26	6	16	26
116·2	121·9	127·5	133·2	138·4	143·7	148·3	153·0	156·8	**71**	160·5	163·2	165·0	165·9	165·6	163·7	160·8	157·0	153·0	149·7
164·4	166·6	176·5	191·0	207·4	224·8	241·9	258·1	271·6		279·4	278·3	270·7	267·2	277·1	290·8	307·3	323·2	342·0	0·1
63·0	63·0	62·5	61·8	60·8	59·6	58·3	57·0	55·8		54·5	53·6	52·9	52·5	52·5	52·9	53·6	54·5	55·7	57·1
157·3	169·4	181·8	194·5	206·8	219·6	232·1	245·7	257·3		270·0	282·8	295·3	307·9	320·3	333·0	345·3	357·8	10·1	22·1
239·4	240·4	241·5	242·4	243·4	244·4	245·6	246·8	248·0		249·1	250·2	251·2	252·4	253·2	253·9	254·8	255·2	255·7	256·2
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
227·3	234·3	241·6	249·1	256·4	264·0	271·6	279·2	287·2	**72**	294·9	302·9	310·6	318·4	326·1	334·0	341·6	349·3	356·8	4·5
157·7	171·8	188·2	205·5	222·8	239·3	253·2	262·4	262·9		255·5	252·2	258·4	271·2	287·3	305·0	323·1	341·0	357·8	11·2
94·6	95·5	96·1	96·5	96·6	96·2	95·7	94·7	93·5		92·3	91·0	89·6	88·4	87·4	86·7	86·2	86·0	86·0	86·8
153·4	152·3	154·5	160·2	167·7	176·7	186·4	196·9	208·0		219·2	230·9	242·6	254·7	266·9	279·0	291·2	303·3	315·6	328·0
250·0	250·8	251·5	252·3	253·4	254·5	255·6	256·7	257·8		259·0	260·1	261·2	262·4	263·3	264·3	265·2	265·9	266·5	267·1
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
129·7	135·7	141·8	147·5	153·3	158·9	164·7	170·1	175·2	**73**	180·2	185·0	189·5	193·4	197·0	199·7	201·7	202·6	202·5	200·9
167·2	184·6	202·0	218·6	233·6	244·5	248·0	241·9	236·3		239·6	250·7	265·8	283·1	301·2	318·9	334·7	350·1	358·8	358·5
121·9	123·6	125·1	127·3	126·5	128·1	128·6	128·7	128·3		127·8	127·1	126·1	124·8	123·5	122·1	120·9	119·9	119·0	118·4
195·4	207·8	220·8	232·3	244·6	257·0	269·3	281·4	293·5		305·6	317·4	328·8	339·9	350·6	1·2	10·6	19·1	26·6	31·1
260·5	261·2	261·8	262·4	263·3	264·3	265·3	266·6	267·7		268·8	270·0	271·2	272·3	273·4	274·4	275·4	276·2	276·9	277·7
245·4	252·5	259·6	266·8	274·3	281·8	289·3	296·9	304·4	**74**	312·1	319·6	327·3	334·8	342·3	349·8	357·2	4·7	11·8	19·0
180·8	197·9	213·8	226·2	232·2	228·8	221·6	222·0	231·0		245·0	261·7	279·3	297·9	314·0	328·8	339·0	341·1	334·3	331·6
146·7	148·8	150·7	152·6	154·3	155·7	157·2	158·2	158·7		159·2	159·3	159·0	158·5	157·8	156·5	155·3	154·1	152·6	151·7
139·5	152·2	164·2	176·6	188·9	201·4	213·8	226·4	238·8		251·5	264·1	276·7	289·5	302·0	314·1	326·6	339·2	351·7	4·4
271·5	271·9	272·4	272·8	273·7	274·5	275·4	276·5	277·6		278·8	280·0	281·2	282·3	283·5	284·7	285·8	286·7	287·7	288·5
142·1	148·2	154·3	160·5	166·5	172·6	178·7	184·6	190·5	**75**	196·5	202·4	208·0	213·6	219·1	224·3	229·5	234·2	238·6	242·8
193·4	207·2	215·8	215·5	207·7	205·2	211·9	224·7	240·6		257·8	275·6	292·7	307·9	319·4	323·8	318·3	312·4	316·3	328·0
170·2	172·4	174·6	176·8	178·8	180·7	182·5	184·2	185·7		186·9	187·9	188·6	189·2	189·3	189·0	188·7	187·8	186·8	185·5
218·8	227·4	234·4	239·7	241·4	239·8	233·4	228·2	225·9		227·2	234·2	238·8	247·4	256·7	266·9	277·6	288·7	300·2	311·5
283·0	283·2	283·3	283·5	284·3	285·1	285·7	286·7	287·8		288·9	290·1	291·3	292·4	293·6	294·7	296·0	297·1	298·2	299·3
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
270·3	276·4	282·8	289·6	296·3	303·3	310·1	317·1	324·3	**76**	331·4	338·5	345·5	352·7	359·8	6·7	13·6	20·5	27·4	34·3
198·9	200·6	193·6	189·2	194·4	206·0	221·4	238·4	255·9		272·8	288·6	301·1	306·4	302·2	295·5	297·4	307·8	322·[illegible]	340·6
193·9	196·0	198·2	200·4	202·6	204·7	206·9	209·0	211·0		212·9	214·6	216·1	217·3	218·3	219·2	219·7	219·9	219·5	219·1
177·2	189·5	202·0	214·5	227·2	239·8	252·1	265·0	277·5		290·0	302·4	314·8	327·0	339·2	315·4	3·2	14·9	26·6	37·9
294·8	294·8	294·9	294·9	295·5	296·0	296·6	297·6	298·7		299·6	300·8	302·0	303·1	304·3	305·5	306·7	307·9	309·0	310·1
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
154·4	160·6	167·2	173·5	179·8	186·3	192·6	199·0	205·5	**77**	211·9	218·4	224·7	231·1	237·5	244·1	250·5	256·9	263·4	269·6
180·1	173·7	176·0	186·4	200·9	217·5	234·8	252·0	268·2		281·5	289·3	287·4	279·7	278·5	287·2	301·2	318·1	336·4	355·0
218·2	220·2	222·3	224·4	226·6	228·8	231·1	233·4	235·5		237·8	40·0	242·0	243·8	245·6	247·2	248·6	249·8	250·7	251·3
127 6	138·5	149·7	161·4	173·1	185·0	197·1	209·5	221·9		234·2	246·5	258·9	271·5	284·0	296·6	309·0	321·4	333·8	346·2
307·4	307·1	306·9	306·7	307·0	307·5	307·8	308·7	309·5		310·4	311·5	312·6	313·7	314·9	316·1	317·4	318·7	320·0	321·2
314·4	315·9	318·8	322·4	326·8	331·2	336·4	341·1	347·3	**78**	353·3	359·0	5·2	11·3	17·5	23·7	29·9	36·0	42·6	48·9
158·1	166·5	180·4	196·6	213·9	231·1	247·3	261·8	271·3		272·6	265·2	261·6	267·4	279·9	296·0	313·8	332·1	350·3	7·2
244·5	246·0	247·7	249·5	251·7	253·6	255·9	258·2	260·5		262·9	265·2	267·5	269·8	272·0	274·0	276·1	278·0	279·8	281·4
211·8	224·0	235·4	247·2	258·3	269·4	279·0	290·0	299·6		307·5	314·0	317·5	317·9	313·7	307·9	305·2	302·1	304·2	310·9
320·6	320·2	319·9	319·5	319·5	319·7	319·7	320·3	321·0		321·7	322·7	323·8	324·8	326·0	327·2	328·5	329·8	331·1	332·3
166·2	172·7	179·2	185·8	192·3	199·1	205·8	212·5	219·4	**79**	226·1	233·0	240·0	246·9	254·0	261·0	268·3	275·5	282·6	289·9
159·7	175·6	192·9	210·1	226·9	242·2	253·1	257·0	251·5		245·4	248·5	259·2	274·4	291·7	309·8	327·7	344·8	359·6	9·1
274·6	275·2	276·1	277·4	278·9	280·5	282·5	284·5	286·6		288·8	291·0	293·4	295·8	298·1	300·5	302·9	305·2	307·5	309·6
157·6	169·9	182·3	195·0	207·4	220·1	232·6	245·2	258·0		270·9	283·3	295·8	308·4	320·8	333·3	346·0	358·3	10·6	22·6
334·5	333·8	333·2	332·5	332·4	332·2	332·2	332·6	333·1		333·5	334·5	335·4	336·3	337·4	338·5	339·7	341·0	342·3	343·5
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
33·0	31·6	29·6	26·8	24·2	21·9	20·7	20·8	22·1	**80**	23·8	27·0	30·4	34·3	37·8	43·6	48·7	53·8	59·2	64·5
173·3	191·0	207·9	223·6	235·7	241·4	237·4	230·2	231·2		240·8	255·1	271·9	289·6	307·6	324·7	339·5	348·7	351·7	346·9
310·2	309·5	308·8	308·6	309·0	309·8	310·9	312·3	313·9		315·8	317·8	319·9	322·2	324·5	325·8	329·3	331·7	334·1	336·5
150·0	150·1	153·3	159·4	167·3	176·5	186·2	197·0	208·0		219·6	231·3	243·3	255·3	267·4	279·9	291·8	303·9	316·2	328·6
348·7	348·0	347·8	346·5	346·2	345·8	345·5	345·7	345·8		346·1	346·8	347·6	348·2	349·4	350·5	351·5	352·7	354·1	355·4

Mag.	P.Phal.	U.Phal.	Hast.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P.Ash.	U.Ash.	Srav.	Dan.	Satab.	P.Bhad.	U.Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
☉'s Mean L.		357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.		+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
Tamil month.		Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. date.		1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1880	Mars ...	67·5	73·2	79·1	84·9	90·9	96·9	103·0	108·9	115·1	121·3	127·4	133·8	140·1	146·4	152·8	159·2	165·7	172·2
☉'s L.	Merc. ...	341·5	343·2	353·7	8·8	26·7	45·7	64·5	83·1	99·1	111·5	116·6	111·5	105·6	108·6	119·7	135·6	151·8	169·7
+·4	Jup. ...	338·6	340·9	343·2	345·4	347·5	349·5	351·2	352·7	353·9	355·0	355·7	356·0	356·1	355·6	355·1	354·2	353·2	351·8
	Ven. ...	334·7	346·9	359·2	11·5	23·6	36·0	48·1	60·5	72·6	84·9	97·2	109·3	121·8	133·9	146·2	158·5	171·0	183·4
	Sat. ...	354·9	356·5	358·2	359·9	1·1	2·2	3·3	4·0	4·8	5·6	5·8	6·1	6·4	6·2	5·9	5·7	5·3	4·8
1881	Mars ...	312·7	320·2	328·0	335·6	343·2	350·6	358·0	5·4	12·5	19·7	26·5	33·3	39 9	46·1	52·1	58·0	63·4	68·3
☉'s L.	Merc. ...	332·1	346·3	3·6	22·3	41·3	59·8	76·7	90·6	97·8	95·3	88·0	88·9	98·6	113·1	130·1	148·1	165·8	182·8
+·2	Jup. ...	6·2	8·6	11·0	13·4	15·8	18·2	20·5	22·6	24 6	26·5	28·2	29·7	30·9	31·8	32·4	32·7	32·6	32·3
	Ven. ...	30·3	29·3	24·3	17·2	13·9	13·9	17·4	23·5	31·0	39·9	49·8	60·1	70·6	82·2	93·4	104·9	116·8	128·5
	Sat. ...	7·9	9·2	10·5	11·9	13·2	14·4	15·6	16·6	17·5	18·6	19·1	19·4	20·3	20·4	20·4	20·5	19·9	19·4
1882	Mars ...	84·3	89·0	94·1	99·3	104·7	110·3	116·0	121·8	127·7	133·7	139·8	146·0	152·4	158·6	165·0	171·6	178·1	184·8
☉'s L.	Merc. ...	340·7	358·9	17·8	36·4	53·9	68·9	78·1	77·9	70·5	69·2	77·4	91·2	108·0	125·9	144·1	161·4	177·2	189·2
−·1	Jup. ...	33·8	36·0	38·3	40·6	42·9	45·3	47·8	50·1	52·3	54·6	56·9	58·9	60·9	62·6	64·1	65·4	66·5	67·2
	Ven. ...	11·2	23·6	35·8	48·3	60·0	72·4	84·5	96·4	108·3	120·1	132·1	143·4	155·1	166·8	177·6	188·6	199·3	203·9
	Sat. ...	20·0	21·3	22·6	24·0	25·4	26·8	28·1	29·3	30·4	31·5	32·3	33·1	33·9	34·2	34·5	34·8	34·5	34·2
Eng. Date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1883	Mars ...	330·4	338·1	345·9	353·5	1·1	8·7	16·1	23·4	30·6	37·7	44·8	51·5	58·2	64·7	71·1	77·4	83·3	89·2
☉'s L.	Merc. ...	356·5	15·0	32·7	48·0	58·2	59·5	51·9	49·6	56·9	70·6	87·2	105·3	123·7	141·6	157·9	171·0	177·8	175·1
+·6	Jup. ...	62·1	63·8	65·6	67·5	69·7	71·8	74·1	76·4	78·7	81·0	83·3	85·6	87·9	89·9	91·8	93·8	95·6	97·6
	Ven. ...	318·9	330·8	342·8	354·8	6·7	18·6	30·6	42·8	54·9	67·0	79·9	92·4	103·4	115·7	128·0	140·4	153·8	165·2
	Sat. ...	32·7	34·0	35·3	36·6	37·9	39·3	40·7	41·9	43·1	44·4	45·4	46·4	47·4	48·0	48·6	49·1	49·1	49·0
Eng. Date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1884	Mars ...	105·4	107·6	111·9	115·9	120·6	125·4	130·8	136·3	141·8	147·6	153·5	159·7	165·8	172·2	178·7	185·1	191·9	198·7
☉'s L.	Merc. ...	9·9	25·7	37·3	40·8	34·3	30·1	35·4	48·0	64·3	82·6	101·3	119·5	136·5	150·9	160·2	160·3	152·9	150·0
+·4	Jup. ...	91·3	92·1	93·2	94·5	96·1	97·9	99·7	101·7	103·8	106·0	108·2	110·4	112·8	115·0	117·3	119·5	121·6	123·6
	Ven. ...	43·7	54·6	64·6	74·1	82·9	89·9	94·9	97·2	95·5	89·9	84·2	79·6	81·6	83·8	90·2	98·0	107·1	117·4
	Sat. ...	45·5	46·7	47·9	49·1	50·5	51·9	53·3	54·6	55·9	57·2	58·3	59·4	60·5	61·4	62·2	63·0	63·3	63·5
1885	Mars ...	346·3	354·1	1·7	9·2	16·8	24·0	31·4	38·8	45·6	52·8	59·6	66·5	73·3	79·5	86·1	92·4	98·5	104·[illegible]
☉'s L.	Merc. ...	16·1	21·6	17·1	11·0	14·0	25·6	41·3	59·5	78·3	96·9	114·6	130·1	141·3	144·3	137·8	132·9	137·5	149·6
+·1	Jup. ...	122·5	122·3	122·5	122·8	123·5	124·5	125·8	127·2	128·9	130·8	132·8	134·8	136·9	139·1	141·2	143·4	145·6	147·8
	Ven. ...	353·0	5·5	17·8	30·1	42·4	53·9	66·8	79·1	91·3	103·5	115·9	128·0	140·1	152·1	164·2	176·2	188·3	200·3
	Sat. ...	58·6	59·6	60·7	61·8	63·1	64·4	65·7	67·0	68·4	69·8	71·2	72·5	73·8	74·7	75·6	76·5	77·1	77·7
1886	Mars ...	134·0	134·0	135·3	137·3	140·0	143·7	148·0	152·7	157·6	163·0	168·6	174·6	180·5	186·8	193·2	199·9	206·5	213·4
☉'s L.	Merc. ...	0·1	352·7	353·6	3·3	18·5	36·2	55·1	73·9	92·1	108·6	121·2	126·8	122·5	116·0	115·6	128·7	143·4	160·4
−1	Jup. ...	155·6	154·5	153·7	152·9	152·8	152·9	153·2	154·1	155·0	156·0	157·5	159·2	161·0	162·9	165·0	167·0	169·1	171·3
	Ven. ...	313·8	322·3	331·7	342·0	353·1	3·7	14·7	26·1	37·8	49·6	61·3	73·2	85·1	97·1	109·3	121·5	133·6	145·9
	Sat. ...	71·9	72·8	73·7	74·6	75·8	77·0	78·1	79·4	80·7	82·1	83·5	84·8	86·1	87·2	88·3	89·4	90·3	91·1
Eng. Date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1887	Mars ...	2·4	9·7	17·3	24·6	31·9	39·0	46·1	53·2	60·2	66·9	73·8	80·8	87·0	93·5	99·9	106·1	112·4	118·8
☉'s L.	Merc. ...	333·9	343·1	357·3	14·8	33·6	52·7	70·9	86·0	101·1	108·4	105·5	98·3	99·4	109·3	123·9	140·7	158·5	176·1
+·6	Jup. ...	189·4	188·1	186·8	185·5	184·5	183·6	183·1	182·9	183·0	183·3	184·0	184·9	186·2	187·6	189·4	191·2	193·2	195·1
	Ven. ...	30·4	42·3	54·4	66·2	77·3	89·1	100·3	111·3	121·8	131·8	141·3	149·7	156·6	161·5	163·9	162·1	156·6	150·2
	Sat. ...	85·4	86·1	86·8	87·5	88·5	89·6	90·7	92·0	93·3	94·6	95·9	97·2	98·5	99·8	101·0	102·2	103·2	104·2
Eng. Date.		Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1888	Mars ...	178·0	174·2	170·2	168·3	169·6	170·5	173·9	175·7	179·4	183·4	188·3	193·6	199·2	205·0	211·1	217·4	224·2	230·8
☉'s L.	Merc. ...	335·1	351·9	10·9	29·2	48·0	65·5	80·0	88·9	88·3	80·9	79·9	88·2	102·1	118·7	136·8	154·6	171·8	187·3
+·3	Jup. ...	223·3	222·4	221·3	220·6	218·9	217·5	216·3	215 2	214·4	213·6	213·3	213·4	213·8	214·6	215·7	216·3	218·2	219·9
	Ven. ...	335·2	347·5	359·7	12·2	24·2	36·5	48·8	60·0	73·1	85·6	97·7	110·0	122·4	134·4	146·9	159·0	171·5	183·9
	Sat. ...	99·2	99·6	100·0	100·5	101·3	102·2	103·1	104·3	105·5	106·8	108·1	109·4	110·6	112·0	113·3	114·6	115·7	116·8
1889	Mars ...	16·9	24·2	31·4	38·6	45·6	52·4	59·4	66·2	73·0	79·6	86·4	92·8	99·4	105·8	112·2	118·7	124·8	131·1
☉'s L.	Merc. ...	347·1	6·8	24·6	42·4	57·8	68·3	70·5	63·3	60·2	67·1	80·1	96·4	114·5	132·7	150·4	166·9	179·8	186·9
+·1	Jup. ...	255·7	255·9	255·7	255·3	254·7	253·7	252·5	251·2	249·9	248·6	247·4	246·4	245·7	245·5	245·4	245·6	246·2	247·2
	Ven. ...	28·2	25·8	20·2	14·1	11·0	12·0	16·2	22·6	30·7	40·0	51·2	60·2	71·1	82·1	93·7	105·2	117·1	129·0
	Sat. ...	113·2	113·4	113·4	113·4	114·1	114·8	115·5	116·5	117·5	118·3	119·8	121·1	122·4	123·7	125·0	126·4	127·6	128·7

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

mean Sunrise for every ten days from A.D. 1880 to A.D. 1889.

	180	190	200	210	220	230	240	250	260
	174·4	184·3	194·1	204·0	213·8	223·7	233·5	243·4	253·3
	−2·2	−2·1	−1·9	−1·7	−1·5	−1·2	−0·9	−0·5	−0·1
	O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27
	Pur	Aipp	Aipp	Aipp	Kart	Kart	Kart	Marg	Marg
	25	4	14	24	4	14	24	5	15
81	179·0	185·7	192·2	199·0	205·9	212·8	219·9	226·9	233·8
	187·1	203·3	216·7	224·9	224·0	216·4	214·3	221·5	234·6
	350·5	349·2	348·0	347·0	346·2	345·6	344·6	345·8	346·6
	195·7	208·1	220·5	232·8	245·1	257·3	269·6	281·9	294·0
	4·5	3·3	2·2	1·0	0·4	359·9	359·3	359·3	359·2
82	72·9	76·9	80·0	82·5	83·9	84·2	83·0	81·6	77·1
	197·6	207·6	209·8	203·1	198·0	202·9	214·4	229·7	246·8
	31·5	30·5	29·2	27·8	26·4	25·1	24·1	23·2	22·6
	140·7	152·8	164·8	177·2	189·5	202·0	214·4	227·0	239·6
	18·7	17·9	17·2	16·3	15·5	14·7	13·8	13·6	13·2
83	191·5	198·4	205·3	212·2	219·4	226·4	233·4	241·0	248·4
	194·3	189·7	183·9	184·9	194·8	209·2	225·6	243·1	260·2
	67·7	67·8	67·5	67·0	67·2	65·1	63·8	62·5	61·2
	218·5	226·9	233·3	238·9	240·4	235·6	229·1	224·2	223·4
	33·9	33·2	32·4	31·6	30·8	30·0	29·2	28·6	28·0
	O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28
84	94·7	99·9	104·7	109·3	113·2	116·5	119·7	120·9	121·2
	167·5	167·7	177·3	190·2	206·6	223·8	240·9	257·5	271·5
	98·5	99·7	100·4	101·0	101·0	100·9	100·4	99·5	98·5
	177·7	190·2	202·6	215·0	227·7	240·3	252·8	265·5	278·0
	49·0	48·4	47·8	47·3	46·5	45·7	44·8	44·1	43·4
	O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27
85	205·7	212·5	219·5	226·9	234·7	241·4	248·5	256·3	264·0
	157·0	169·9	185·7	202·9	220·2	236·9	251·7	262·5	266·2
	125·4	127·2	128·7	130·1	131·2	132·1	132·6	132·8	132·8
	127·7	139·1	150·0	161·7	173·4	185·6	197·6	209·2	222·2
	63·8	63·6	63·4	63·2	62·4	61·5	60·6	59·7	58·9
86	110·5	116·3	121·7	127·2	132·3	137·0	141·3	145·2	148·6
	164·6	181·7	199·2	216·3	231·9	244·3	250·1	246·8	239·5
	150·0	152·1	154·2	156·1	157·7	159·3	160·6	161·7	162·5
	212·1	224·1	235·7	247·3	258·4	269·5	280·1	289·7	298·8
	78·3	78·2	78·1	78·0	77·4	76·8	76·2	75·5	74·7
87	220·2	227·0	234·7	241·9	249·2	256·4	264·0	272·1	279·9
	178·0	195·5	211·7	225·4	233·8	233·2	225·5	223·2	230·0
	173·5	175·7	177·8	180·0	182·1	184·0	185·9	187·7	189·2
	158·2	170·5	182·9	195·6	208·1	220·7	233·2	246·0	258·6
	91·9	92·2	92·4	92·6	92·3	92·0	91·6	90·9	90·1
	O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28
88	124·8	130·8	136·6	142·3	147·9	153·5	158·6	163·7	168·6
	192·9	207·4	216·9	218·5	210·9	207·2	211·3	224·3	239·8
	197·2	199·4	201·4	203·7	205·9	208·1	210·2	212·4	214·4
	147·3	148·0	152·0	158·7	167·0	176·2	186·5	197·2	208·3
	105·1	105·6	106·1	106·5	106·5	106·4	106·3	105·8	105·2
	O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27
89	238·0	245·0	252·1	259·5	267·0	274·5	282·0	289·7	297·4
	199·0	203·4	197·9	191·6	194·1	204·8	219·2	235·8	253·4
	221·6	223·6	225·6	227·7	229·9	232·1	234·4	236·6	238·9
	196·2	208·6	221·0	233·3	245·4	257·8	270·0	282·2	294·3
	117·8	118·5	119·2	119·9	120·1	120·3	120·5	120·1	119·7
90	137·3	143·3	149·4	155·6	161·6	167·4	173·2	179·1	184·7
	184·6	176·8	176·5	185·1	199·0	215·1	232·2	249·5	266·5
	248·4	250·4	251·5	253·3	255·2	257·4	259·5	261·8	264·1
	141·2	153·1	165·3	177·7	190·0	202·5	214·9	227·6	240·1
	129·8	131·0	132·3	133·6	133·7	133·8	133·9	133·8	133·7

	270	280	290	300	310	320	330	340	350	360
	263·1	273·0	282·8	292·7	302·5	312·4	322·2	332·1	342·0	351·8
	+0·3	+0·6	+1·0	+1·3	+1·6	+1·8	+2·0	+2·1	+2·2	+2·2
	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
	Marg	Tai	Tai	Tai	Masi	Masi	Masi	Pang	Pang	Pang
	25	5	15	25	6	16	26	6	16	26
81	241·1	248·4	255·8	263·1	270·7	278·2	285·7	293·3	300·9	308·7
	250·6	268·1	285·6	302·7	318·2	329·8	334·3	328·1	322·8	326·8
	347·5	349·5	350·2	351·9	353·8	356·0	358·1	0·3	2·7	5·1
	305·8	317·7	328·9	340·0	350·7	0·9	10·1	18·6	25·1	29·3
	359·1	359·6	0·2	0·6	1·6	2·5	3·5	4·7	5·9	7·2
82	73·4	70·0	68·1	66·9	67·1	68·6	70·8	74·2	77·9	82·0
	264·4	281·5	297·4	310·3	316·2	312·7	305·5	307·1	317·2	331·8
	22·2	22·2	22·6	23·3	24·3	25·6	27·1	28·8	30·7	32·8
	252·1	264·7	277·5	290·1	302·7	315·2	327·8	340·2	352·3	4·7
	13·0	13·3	13·5	13·8	14·5	15·3	16·0	17·1	18·3	19·5
83	256·2	263·4	270·9	278·7	286·4	294·2	301·9	309·9	317·8	325·6
	276 5	290·4	298·3	297·6	289·8	286·9	293·3	310·2	327·1	345·3
	59·9	58·8	58·0	57·4	57·2	57·5	58·0	58·7	59·7	61·1
	225·5	230·8	238·1	246·9	256·4	266·8	277·7	289·0	300·3	312·2
	27·4	27·3	27·3	27·3	27·8	28·3	28·9	30·0	31·0	32·0
	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
84	120·5	118·9	115·7	111·8	108·2	105·4	102·6	101·9	102·5	104·2
	281·0	281·8	274·2	270·9	277·3	290·2	306·5	324·4	343·0	1·1
	97·3	96·1	94·2	93·5	92·4	91·6	90·8	90·5	90·5	90·9
	290·5	302·9	315·2	327·5	339·5	351·7	3·5	15·4	27·1	38·1
	42·6	42·3	42·0	41·7	42·1	42·5	42·8	43·5	44·2	44·9
	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
85	271·6	279·5	287·3	295·1	303·1	310·9	318·8	326·8	334·6	342·5
	260·1	254·7	258·2	269·4	284·7	302·2	320·4	338·5	355·8	10·5
	132·4	131·7	131·1	129·5	128·2	126·8	125·5	124·4	123·4	122·7
	234·5	247·0	259·4	272·0	284·5	297·1	309·3	321·9	334·3	346·7
	58·1	57·5	57·0	56·5	56·4	56·4	56·4	56·8	57·2	57·7
86	151·0	152·9	153·3	152·5	150·4	147·0	143·2	139·3	136·3	134·4
	240·0	249·4	263·5	280·3	298·2	316·2	333·4	348·9	359·8	2·4
	163·2	163·5	163·5	163·0	162·2	161·3	160·2	158·8	157·6	156·3
	306·5	312·8	315·6	316·8	309·6	303·1	299·6	300·2	303·9	310·0
	73·9	73·1	72·3	71·6	71·3	71·0	70·7	71·0	71·3	71·6
87	288·0	295·5	303·2	311·2	318·9	326·9	334·8	342·3	350·1	357·7
	243·0	259·1	276·5	294·5	311·5	327·4	339·5	344·4	339·4	334·3
	190·6	191·7	192·6	193·3	193·4	193·4	193·0	192·4	191·4	190·2
	271·3	283·9	296·4	309·0	321·4	334·1	346·4	358·7	11·0	23·2
	89·3	88·5	87·7	86·9	86·3	85·7	85·2	85·2	85·2	85·2
	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6
88	173·5	177·2	180·9	183·8	186·9	187·2	186·2	185·8	183·6	179·5
	257·0	274·7	291·9	307·7	320·4	325·7	322·2	315·4	317·4	327·9
	216·3	218·0	219·6	221·1	222·2	223·0	223·6	224·1	224·1	223·7
	219·7	231·6	243·5	255·6	267·9	280·1	292·3	304·4	316·7	329·1
	104·6	103·8	103·0	102·1	101·3	100·6	99·9	99·6	99·3	99·1
	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
89	305·2	312·8	320·5	328·2	336·0	343·4	351·1	358·5	5·9	13·3
	270·8	287·1	300·4	308·3	306·7	299·0	298·1	306·9	321·0	338·1
	241·1	243·3	245·5	247·4	249·2	250·3	252·4	253·5	254·5	255·5
	306·0	318·0	329·2	340·0	350·8	0·6	9·8	17·9	24·2	27·6
	119·4	118·6	117·8	117·0	116·2	115·4	114·7	114·2	113·7	113·2
90	190·3	195·9	201·2	206·2	211·3	215·7	219·9	223·5	226·6	229·1
	280·4	290·2	291·2	283·8	280·4	286·5	299·1	315·7	333·7	352·7
	266·4	268·6	271·0	273·4	275·5	277·6	279·7	281·7	283·6	285·6
	252·8	265·4	278·0	290·6	303·2	315·8	328·3	340·7	353·2	5·6
	133·5	132·9	132·3	131·6	130·9	130·1	129·3	128·6	127·9	127·2

Mag.	P.Phal.	U.Phal.	Hast.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P.Ash.	U.Ash.	Srav.	Dan.	Satab.	P.Bhad.	U.Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
⊙'s mean L.	357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.	+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1890 Mars ...	230·0	231·0	230·7	229·6	227·1	224·3	221·2	219·1	218·1	218·6	220·2	222·9	226·5	230·8	235·8	241·2	247·3	253·2
⊙'s L. Merc. ...	3·2	21·1	36·9	48·4	51·4	45·1	40·9	46·5	59·1	75·5	93·6	112·2	130·3	147·1	161·3	169·8	169·4	161·5
+·8 Jup. ...	286·1	287·3	288·4	289·1	289·5	289·6	289·3	288·7	287·8	286·8	285·4	284·0	282·7	281·9	280·7	279·6	279·1	279·0
Ven. ...	13·1	25·5	37·5	50·0	62·1	74·3	86·2	98·3	110·3	121·9	133·5	145·1	156·6	167·9	179·3	189·9	200·2	209·8
Sat. ...	127·0	126·6	126·5	126·6	127·0	127·4	127·9	128·8	129·7	130·6	131·7	132·8	134·0	135·2	136·5	137·8	139·1	140·4
1891 Mars ...	31·1	38·8	45·8	52·5	59·3	66·1	72·7	79·3	85·7	92·3	98·8	105·2	111·7	118·2	124·6	130·8	137·1	143·5
⊙'s L. Merc. ...	14·5	25·7	32·6	27·7	21·6	25·3	36·9	52·8	70·7	89·5	108·0	125·0	140·8	151·4	153·7	146·9	142·6	147·5
+·6 Jup. ...	314·7	316·7	318·5	320·2	321·6	322·9	324·1	324·6	324·9	324·9	324·5	323·8	322·8	321·5	320·3	319·0	317·6	316·4
Ven. ...	319·5	331·4	343·2	355·2	7·3	19·2	31·3	43·4	55·5	67·6	79·9	91·8	103·6	116·3	128·6	141·0	153·4	165·8
Sat. ...	140·8	140·4	140·0	139·6	139·8	140·0	140·2	140·8	141·5	142·2	143·2	144·3	145·4	146·6	147·8	149·1	150·4	151·6
Eng. Date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1892 Mars ...	263·3	268·6	273·7	278·7	283·0	287·1	290·3	294·2	294·2	294·7	293·5	291·0	288·7	286·2	284·6	284·6	286·4	289·1
⊙'s L. Merc. ...	13·0	10·4	3·2	4·5	14·5	29·6	47·5	66·6	85·1	103·1	119·4	131·7	137·0	132·1	125·8	128·4	139·1	153·8
+·3 Jup. ...	342·4	344·8	347·1	349·3	351·5	353·5	355·4	357·1	358·5	359·8	0·3	0·8	1·3	1·2	0·7	0·0	359·0	357·6
Ven. ...	44·0	54·6	64·7	73·8	82·2	88·9	93·6	94·8	91·9	85·7	80·1	77·2	78·5	82·7	89·3	97·9	107·2	117·1
Sat. ...	154·3	153·7	153·2	152·7	152·6	152·5	152·5	152·9	153·3	153·8	154·8	155·7	156·6	157·7	158·8	160·0	161·2	162·5
1893 Mars ...	46·3	52·8	59·3	65·8	72·1	78·5	85·0	91·4	97·8	104·1	110·5	116·9	123·3	129·5	136·0	142·3	148·9	155·0
⊙'s L. Merc. ...	345·7	344·4	352·7	7·0	24·3	43·0	61·9	79·4	97·4	111·2	118·6	116·3	109·0	109·4	118·6	132·7	149·3	167·1
+·1 Jup. ...	9·9	12·3	14·7	17·2	19·5	21·9	24·4	26·5	28·5	30·6	32·4	34·0	35·3	36·4	37·0	37·6	37·7	37·5
Ven. ...	353·6	6·1	18·4	30·7	43·0	55·3	67·5	79·7	91·9	104·1	116·5	128·6	140·6	152·7	164·6	176·8	188·9	200·7
Sat. ...	167·7	166·9	166·2	165·7	165·2	164·2	164·7	164·9	165·1	165·4	166·2	166·9	167·6	168·6	169·6	170·7	171·9	173·1
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1894 Mars ...	286·5	293·9	300·5	307·4	314·1	321·0	327·8	333·9	340·1	345·7	351·4	356·1	0·5	4·0	6·3	7·7	7·5	6·1
⊙'s L. Merc. ...	332·6	345·8	2·8	21·5	40·3	58·3	76·6	91·1	99·5	99·2	91·5	90·4	98·8	112·7	129·5	147·1	165·0	182·2
+·8 Jup. ...	37·8	40·0	42·3	44·6	46·9	49·3	51·6	54·0	56·3	58·6	60·9	62·9	64·8	66·6	68·3	69·8	70·9	71·8
Ven. ...	314·3	323·0	332·8	343·2	353·8	5·0	16·4	27·6	39·1	51·3	63·0	74·8	86·8	98·7	110·9	123·2	135·5	147·6
Sat. ...	180·4	180·0	179·6	179·1	178·4	177·6	176·8	176·8	176·8	176·8	177·4	178·0	178·5	179·4	180·4	181·4	182·5	183·6
1895 Mars ...	61·6	67·5	73·6	79·6	85·8	91·8	98·0	104·2	110·3	116·7	122·7	129·0	135·4	141·7	148·1	154·6	161·0	167·6
⊙'s L. Merc. ...	341·6	358·2	17·0	35·8	53·6	69·0	79·7	81·2	74·1	71·2	78·0	90·8	107·3	125·1	143·3	160·7	176·8	189·7
+·5 Jup ...	65·9	67·4	69·3	71·1	73·2	75·3	77·6	79·9	82·1	84·4	86·7	89·0	91·2	93·4	95·4	97·4	99·2	100·8
Ven. ...	30·9	42·7	54·9	66·3	78·0	89·4	100·4	111·4	121·7	131·7	141·0	149·2	155·8	160·2	161·3	158·4	152·1	147·1
Sat ...	192·9	192·1	191·3	190·6	190·0	189·4	188·8	188·6	188·4	188·1	188·4	188·7	189·1	189·8	190·7	191·6	192·2	193·7
Eng. Date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jl 10	Jl 20	Jl 30	Au 9	Au 19	Au 29	S 8	S 18	S 28
1896 Mars ...	305·5	313·0	320·6	328·2	335·8	343·1	350·5	357·8	4·8	11·9	18·4	25·0	31·3	37·3	43·2	49·1	53·2	57·4
⊙'s L. Merc. ...	353·9	12·1	30·6	46·8	58·6	62·9	58·7	51·9	56·5	68·8	85·0	102·8	121·2	139·1	156·0	170·1	179·1	179·1
+·3 Jup. ...	95·3	96·0	97·0	98·3	99·8	101·4	103·2	105·2	107·3	109·4	111·6	113·8	115·9	118·3	120·5	122·8	124·9	127·0
Ven. ...	335·8	348·1	0·3	12·8	24·8	37·1	49·2	61·6	73·8	86·2	98·3	110·6	122·8	135·0	147·5	159·6	172·1	184·5
Sat. ...	205·2	203·7	202·1	200·6	199·9	199·2	198·4	198·1	197·7	197·4	197·6	197·7	198·0	198·6	199·3	200·0	201·0	202·1
1897 Mars ...	78·3	82·7	87·9	93·4	99·0	104·7	110·7	116·6	122·6	128·3	134·6	141·1	147·3	153·6	160·1	166·5	173·0	179·6
⊙'s L. Merc. ...	8·2	24·1	37·1	43·5	39·3	33·0	34·7	46·7	62·2	79·9	98·7	116·9	134·5	149·7	160·7	163·6	157·0	152·1
+·0 Jup. ...	126·8	126·6	126·6	126·8	127·3	128·3	129·4	130·8	132·5	134·1	136·0	138·1	140·9	142·3	144·5	146·7	148·9	151·0
Ven. ...	15·7	10·5	3·9	1·0	1·3	4·9	11·3	19·3	28·6	38·8	49·4	60·6	72·1	83·4	95·4	107·5	119·6	131·5
Sat. ...	217·0	216·4	215·7	215·0	214·2	213·5	212·7	212·1	211·6	211·1	211·1	211·0	210·9	211·3	211·8	212·1	213·0	213·8
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1898 Mars ...	323·7	331·5	339·2	346·9	354·6	2·0	9·5	16·9	24·1	31·2	38·1	44·9	51·4	58·1	64·3	70·5	76·4	82·0
⊙'s L. Merc. ...	16·9	24·0	21·2	15·2	15·4	25·8	41·0	58·8	77·4	96·2	114·0	130·0	142·2	146·9	141·6	135·6	138·6	149·3
+·8 Jup. ...	160·1	158·9	158·1	157·4	156·9	156·9	157·1	157·8	158·8	159·8	161·2	162·8	164·4	166·4	168·3	170·4	172·5	174·6
Ven. ...	11·7	24·1	36·7	49·0	61·3	73·9	86·3	98·5	110·5	123·3	135·4	147·3	159·2	171·0	182·1	192·9	203·6	213·2
Sat. ...	228·6	228·0	227·3	226·8	226·0	225·3	224·6	224·0	223·5	222·8	222·4	222·1	221·8	222·1	222·3	222·6	223·4	224·1
1899 Mars ...	96·4	100·3	104·6	110·2	114·3	119·5	124·9	130·5	136·4	142·3	148·1	154·4	160·6	166·9	173·3	179·7	186·6	193·2
⊙'s L. Merc. ...	3·6	356·3	355·2	3·7	18·0	35·5	54·1	73·2	91·3	108·2	121·9	128·8	126·4	119·0	119·6	128·7	143·0	159·6
+·5 Jup. ...	194·1	192·8	191·5	190·3	189·2	188·2	187·5	187·2	187·1	187·2	187·8	188·7	189·8	191·2	192·8	194·5	196·4	198·4
Ven. ...	319·8	331·9	343·7	355·7	7·6	19·7	31·7	43·9	55·5	68·1	80·4	92·3	104·7	116·8	129·3	141·5	153·7	166·3
Sat. ...	239·9	239·5	239·1	238·6	237·8	237·0	236·3	235·7	235·0	234·2	233·8	233·3	233·0	233·0	233·1	233·1	233·7	234·2

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

mean Sunrise for every ten days from A.D. 1890 to A.D. 1899.

180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
174·4	184·3	194·1	204·0	213·8	223·7	233·5	243·4	253·3		263·1	273·0	282·8	292·7	302·5	312·4	322·2	332·1	342·0	351·8
−2·2	−2·1	−1·9	−1·7	−1·5	−1·2	−0·9	−0·5	−0·1		+0·3	+0·6	+1·0	+1·3	+1·6	+1·8	+2·0	+2·1	+2·2	+2·2
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7,8	17,18	27,28	Ap 6,7
Pur 25	Aipp 4	Aipp 14	Aipp 24	Kart 4	Kart 14	Kart 24	Marg 5	Marg 15		Marg 25	Tai 5	Tai 15	Tai 25	Masi 6	Masi 16	Masi 26	Pang 6	Pang 16	Pang 26
259·6	266·3	273·1	280·2	287·3	294·5	302·0	309·1	316·6	**91**	324·0	331·2	338·6	345·8	353·1	0·3	7·5	14·6	21·6	28·6
159·6	166·9	180·0	195·8	213·1	230·3	246·7	261·5	272·3		275·3	268·7	263·8	268·0	279·7	295·4	313·0	331·3	349·5	6·4
279·2	280·0	280·6	281·7	283·1	284·6	286·4	288·5	290·6		292·8	295·0	297·4	299·8	302·1	304·5	306·9	309·2	311·6	313·7
219·0	226·6	232·6	235·8	235·3	231·3	225·1	221·1	220·9		224·4	230·5	238·4	247·5	257·5	267·9	279·0	290·3	301·8	313·5
141·6	142·7	143·7	144·7	145·3	145·9	146·5	146·6	146·7		146·8	146·4	146·0	145·5	144·8	144·0	143·2	142·4	141·6	140·9
149·8	156·2	162·3	168·7	174·9	181·2	187·5	193·7	199·9	**92**	206·2	212·3	218·6	224·6	230·9	237·0	242·9	249·0	254·7	260·6
159·4	175·0	192·1	209·4	226·4	241·9	254·0	259·5	255·4		248·0	249·6	259·5	273·9	290·9	308·9	327·0	344·5	359·7	10·5
315·3	314·4	314·4	314·3	314·7	315·4	316·3	317·6	319·2		321·0	322·8	324·8	327·0	329·3	331·7	334·1	336·5	338·9	341·3
178·3	190·8	203·2	215·8	228·3	240·9	253·4	266·1	278·6		291·1	303·5	315·8	327·9	340·3	352·3	3·9	15·8	27·5	38·4
152·8	153·9	155·0	156·1	157·0	157·8	158·6	158·9	159·2		159·5	159·3	159·0	158·8	158·2	157·5	156·8	156·1	155·3	154·6
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
292·6	296·9	301·7	307·1	312·8	318·7	325·0	331·1	337·5	**93**	344·0	350·6	357·0	3·7	10·2	16·9	23·4	29·9	36·4	43·1
170·8	188·4	205·6	221·7	235·2	242·8	241·7	234·3	232·0		239·9	253·2	266·9	284·4	302·2	320·0	336·4	350·1	357·6	349·2
356·4	354·3	353·7	352·5	351·1	351·0	350·8	350·8	351·4		352·1	353·2	354·5	356·1	358·0	359·8	2·0	4·1	6·5	8·8
127·8	139·1	150·3	162·0	173·9	185·9	198·1	210·3	222·7		235·0	247·5	259·9	272·5	285·0	297·6	309·8	322·4	334·8	346·2
163·8	165·0	166·1	167·2	168·2	169·2	170·1	170·6	171·2		171·7	171·7	171·7	171·7	171·2	170·7	170·1	169·4	168·7	167·9
161·8	168·1	174·4	181·1	187·5	194·0	200·6	207·2	213·9	**94**	220·6	227·4	234·0	241·0	247·7	254·4	261·5	268·5	275·9	282·4
184·7	201·3	215·3	225·8	227·3	220·6	215·9	221·2	232·7		248·1	265·5	283·1	300·8	316·7	329·7	336·3	333·0	326·0	327·4
36·8	35·8	34·8	33·6	32·3	30·9	29·7	28·6	27·8		27·3	27·1	27·4	27·8	28·8	30·0	31·4	32·9	34·7	36·6
212·5	224·6	236·1	247·5	258·6	269·6	279·9	289·7	298·4		305·5	311·0	312·9	311·1	304·7	299·7	298·6	298·2	302·6	309·3
174·3	175·5	176·7	178·0	179·0	180·0	181·0	181·7	182·4		183·1	183·4	183·7	183·9	183·6	183·3	183·0	182·3	181·6	180·8
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7,8	17,18	27,28	Ap 6,7
3·8	1·0	358·6	357·4	357·0	358·2	0·1	3·1	6·7	**95**	10·4	15·0	19·8	24·9	30·1	35·5	41·2	46·8	52·9	58·5
197·2	208·6	212·1	206·7	200·3	203·4	214·2	229·1	245·9		263·4	280·8	297·2	310·5	318·2	316·6	308·9	309·0	318·2	332·4
72·4	72·6	72·3	72·3	71·5	70·3	68·0	67·7	66·3		65·1	64·0	63·0	62·3	62·1	62·1	62·5	63·0	64·0	65·2
159·9	172·4	184·8	197·3	209·9	222·0	235·1	247·7	260·4		273·0	285·6	298·2	310·9	323·1	336·0	348·3	0·5	12·7	24·9
184·8	186·0	187·2	188·4	189·5	190·6	191·7	192·6	193·4		194·2	194·6	195·0	195·3	195·2	195·1	195·0	194·5	194·0	193·4
174·2	180·6	187·3	194·0	200·8	207·6	214·5	221·4	228·4	**96**	235·4	242·5	249·8	257·4	264·3	271·8	279·1	286·6	294·2	301·6
196·2	193·4	185·8	186·0	194·8	208·5	224·8	242·3	259·6		276·1	290·4	299·9	300·8	293·3	290·1	296·6	309·8	326·4	344·5
102·4	103·7	104·5	105·3	105·8	105·8	105·4	104·7	103·8		102·7	101·4	99·9	98·6	97·1	96·4	95·7	95·3	95·1	95·4
144·6	146·3	151·1	158·0	166·2	176·1	186·2	197·4	208·7		220·0	232·1	243·8	255·9	268·2	280·4	292·7	304·9	317·2	329·8
194·8	195·9	197·0	198·2	199·4	200·6	201·8	202·7	203·6		204·6	205·2	205·8	206·3	206·4	206·5	206·5	206·1	205·7	205·3
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6
60·9	63·7	65·3	65·9	65·2	63·4	60·3	56·9	53·9	**97**	51·7	50·5	51·0	52·4	54·4	57·6	61·2	65·5	70·0	74·8
171·3	168·9	175·7	188·4	204·2	221·4	238·5	255·5	270·4		281·2	284·7	278·5	273·2	277·0	288·5	304·0	321·9	340·4	358·7
128·9	130·6	132·2	133·7	135·0	135·9	136·6	137·0	137·0		136·6	136·1	135·2	134·4	132·9	131·6	130·3	129·1	128·0	127·2
196·8	209·2	221·6	233·9	246·0	258·4	270·6	282·6	294·1		305·4	316·4	327·2	337·9	347·6	356·8	5·2	11·9	16·0	17·0
203·2	204·4	205·6	206·7	207·9	209·1	210·3	211·5	212·8		214·1	214·6	215·2	215·7	216·0	216·2	216·6	216·6	216·7	216·8
186·5	193·2	199·9	206·9	213·8	220·9	228·0	235·3	242·6	**98**	250·0	257·3	264·9	272·5	280·2	287·7	295·7	303·4	311·1	319·0
156·5	168·1	183·3	200·3	217·7	234·6	250·2	262·5	268·3		264·5	257·4	258·4	268·1	282·4	299·6	317·6	336·0	353·6	9·3
153·3	155·4	157·3	159·2	161·1	162·7	164·3	165·4	166·3		167·0	167·5	167·6	167·3	166·6	165·7	164·7	163·6	162·7	160·9
143·7	155·8	168·0	180·2	192·3	204·6	216·8	229·0	241·3		253·3	265·4	277·7	289·7	302·2	314·7	327·4	339·4	351·5	4·3
214·8	215·9	217·0	218·0	219·2	220·4	221·5	222·6	223·8		224·9	225·8	226·6	227·4	227·8	228·3	228·8	228·8	228·7	228·8
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
87·2	91·0	96·4	100·3	103·5	106·0	107·5	107·7	106·8	**99**	104·7	101·4	97·6	93·8	90·9	89·1	88·1	90·0	92·0	94·9
164·1	181·0	198·5	215·6	231·4	244·8	252·1	250·3	242·2		240·3	249·8	263·2	279·6	297·7	315·5	333·1	348·1	0·8	5·4
176·8	179·1	181·2	183·7	185·6	187·5	189·5	191·2	192·8		194·1	195·5	196·4	197·3	197·6	197·6	197·4	196·8	195·8	194·7
222·4	230·4	236·2	239·4	239·1	234·6	227·7	223·3	222·5		225·0	230·5	238·0	246·7	256·2	266·7	277·4	288·5	300·0	311·5
224·9	225·9	226·9	228·0	229·1	230·2	231·4	232·6	233·8		234·9	235·8	236·8	237·7	238·4	239·0	239·6	239·7	239·9	240·0
200·1	207·0	214·0	221·2	228·3	235·6	243·0	250·5	258·0	**1900**	265·5	273·3	281·0	288·9	296·8	304·6	312·5	320·5	328·3	336·1
177·3	194·7	211·2	225·8	235·0	236·1	228·8	225·0	230·5		242·7	258·3	275·6	293·7	310·9	327·3	340·3	346·7	343·3	336·2
200·2	202·4	204·6	206·8	209·0	211·2	213·5	215·7	217·7		219·6	221·4	223·2	224·7	225·9	227·0	228·0	228·7	228·4	228·3
178·8	191·3	203·7	216·3	228·8	241·4	254·1	266·5	279·2		291·6	304·0	316·1	328·4	340·6	352·6	4·2	16·1	27·6	38·7
234·8	235·7	236·7	237·7	238·8	239·9	241·1	242·3	243·5		244·6	245·7	246·7	247·7	248·5	249·2	250·1	250·4	250·8	251·1

Mag.	P.Phal.	U.Phal.	Hast.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P.Ash.	U.Ash.	Srav.	Dan.	Satab.	P.Bhad.	U.Bhad.	Revati
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
$\odot$'s Mean L.	357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.	+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1900 Mars ...	340·1	347·8	355·5	3·2	10·8	18·2	25·4	32·7	39·8	47·0	53·9	60·9	67·3	73·8	80·4	86·6	92·8	98·9
$\odot$'s L. Merc. ...	335·7	342·4	355·5	12·1	30·7	49·7	68·3	85·9	100·6	109·9	109·9	102·4	100·6	108·2	121·7	138·0	155·5	173·4
+·2 Jup. ...	227·8	227·0	226·1	225·0	223·7	222·3	221·0	219·9	218·9	218·1	217·6	217·5	217·8	218·4	219·3	220·3	221·6	223·1
Ven. ...	44·1	54·5	64·5	73·7	81·7	88·0	92·0	92·5	88·6	82·3	76·7	74·9	77·0	81·8	89·0	97·4	106·9	116·9
Sat. ...	251·1	250·8	250·6	250·3	249·6	248·8	248·2	247·4	246·7	246·0	245·4	244·9	244·3	244·2	244·0	243·9	244·3	244·8
1901 Mars ...	121·4	122·8	124·9	128·0	131·8	136·0	140·7	145·7	151·0	156·5	162·2	168·4	174·4	180·7	187·2	193·8	200·4	207·2
$\odot$'s L. Merc. ...	333·0	349·2	7·3	26·3	45·3	63·1	78·9	89·6	92·5	85·7	81·8	87·5	100·2	116·1	134·0	151·0	169·3	185·5
+·0 Jup. ...	259·9	260·3	260·3	260·2	259·9	259·4	257·6	256·1	254·9	253·6	252·5	251·4	250·6	250·0	249·9	250·0	250·4	251·2
Ven. ...	354·1	6·5	18·9	31·2	43·6	55·8	68·1	80·2	92·4	104·6	117·0	128·9	141·2	153·2	165·2	177·1	189·4	201·2
Sat. ...	262·1	262·1	262·0	261·9	261·3	260·8	260·2	259·5	258·9	258·1	257·0	255·9	254·9	255·0	255·0	255·1	255·2	255·4
Eng. Date.	Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jl 2	Jl 12	Jl 22	Au 1	Au 11	Au 21	Au 31	S 10	S 20	S 30
1902 Mars ...	356·4	3·9	11·5	18·9	26·2	33·6	40·7	47·8	54·9	61·8	68·5	75·2	81·9	88·4	94·8	101·0	107·3	113·4
$\odot$'s L. Merc. ...	346·3	4·8	23·6	41·8	57·9	69·6	73·9	68·3	62·9	68·8	79·7	95·6	113·5	131·7	149·7	166·1	180·0	188·6
+·7 Jup. ...	289·9	291·3	292·4	293·4	294·1	294·5	294·2	293·0	293·0	291·8	290·7	289·5	288·1	286·8	285·7	284·7	284·0	283·7
Ven. ...	313·5	322·5	332·4	342·9	353·8	4·9	16·3	27·8	39·5	51·3	63·2	74·8	87·0	98·9	111·1	123·3	135·5	147·8
Sat. ...	273·0	273·1	273·3	273·3	273·0	272·6	272·2	271·5	270·7	270·1	269·3	268·6	267·7	267·2	266·8	266·3	266·3	266·2
1903 Mars ...	157·8	155·4	154·7	154·7	156·2	158·5	161·4	165·4	169·9	174·8	179·9	185·6	191·3	197·6	203·9	210·2	217·0	223·9
$\odot$'s L. Merc. ...	0·9	18·8	35·1	48·3	54·4	50·5	43·8	46·7	57·7	73·0	90·8	109·4	127·5	144·9	160·1	170·4	172·9	166·1
+·5 Jup. ...	318·4	320·4	322·4	324·3	325·9	327·3	328·4	329·2	329·5	329·7	329·7	329·2	328·3	327·0	325·8	324·5	323·1	321·9
Ven. ...	31·3	43·6	55·2	66·9	78·6	90·0	100·8	111·6	121·9	131·7	140·8	148·8	155·0	158·2	158·9	155·1	148·5	143·3
Sat. ...	283·8	284·1	284·5	284·8	284·7	284·5	284·2	283·6	282·9	282·3	281·5	281·8	280·1	279·4	278·8	278·1	277·9	277·8
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1904 Mars ...	11·2	18·6	25·8	33·1	40·3	47·3	54·2	61·2	67·9	74·5	81·4	88·0	94·5	101·1	107·4	113·7	120·0	126·3
$\odot$'s L. Merc. ...	12·7	26·7	34·7	32·9	25·5	25·9	35·7	50·6	67·9	86·6	105·1	122·9	139·1	151·3	156·7	151·9	145·3	147·5
+·2 Jup. ...	346·1	348·5	350·9	353·1	355·3	357·4	359·4	1·1	2·7	4·1	5·2	5·9	6·3	6·3	5·9	5·3	4·4	3·2
Ven. ...	336·3	348·4	0·7	13·1	25·3	37·6	49·3	62·1	74·3	86·7	98·8	111·1	123·3	135·5	148·0	160·1	172·6	185·0
Sat. ...	294·6	295·2	295·7	296·2	296·3	296·2	296·3	296·1	296·0	294·8	293·4	293·0	292·6	291·8	291·1	290·4	290·0	289·5
1905 Mars ...	211·5	209·4	206·9	203·7	200·4	198·2	197·0	198·1	198·8	201·3	204·6	208·8	213·6	218·7	224·5	230·5	236·5	243·2
$\odot$'s L. Merc. ...	14·8	15·4	8·1	5·1	13·5	27·6	44·8	63·3	82·2	100·5	117·5	131·2	139·2	137·4	129·7	129·2	137·8	151·7
+·0 Jup. ...	13·7	16·0	18·4	20·8	23·3	25·7	28·0	30·2	32·4	34·2	36·3	37·9	39·4	40·5	41·4	42·2	42·5	42·3
Ven. ...	23·1	18·9	12·8	8·1	6·4	8·9	14·2	21·7	30·2	39·8	50·0	60·7	71·6	83·0	94·6	106·3	118·0	130·1
Sat. ...	305·6	306·3	307·1	307·7	308·0	308·2	308·5	308·2	308·0	307·6	307·0	306·3	305·6	304·8	304·1	303·2	302·8	302·3
Eng. Date.	Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jl 2	Jl 12	Jl 22	Au 1	Au 11	Au 21	Au 31	S 10	S 20	S 30
1906 Mars ...	26·5	33·4	40·4	47·3	54·4	61·0	67·8	74·7	81·1	87·6	94·2	100·6	107·2	113·5	120·0	126·3	132·5	138·9
$\odot$'s L. Merc ...	348·9	346·5	353·3	6·6	23·3	42·0	60·9	79·5	96·8	111·5	120·4	120·2	112·7	110·9	118·8	132·1	148·5	166·1
+·7 Jup. ...	41·6	43·8	45·9	48·2	50·5	52·9	55·2	57·5	59·9	62·2	64·5	66·5	68·5	70·2	71·9	73·6	75·0	76·0
Ven. ...	14·2	26·6	38·8	51·1	63·2	75·2	87·2	99·0	110·8	122·6	134·3	146·0	157·5	168·4	179·4	190·0	200·1	209·3
Sat. ...	316·6	317·5	318·3	319·3	319·7	320·2	320·7	320·6	320·6	320·5	320·0	319·4	318·8	318·0	317·3	316·5	315·8	315·1
1907 Mars ...	252·3	256·3	259·9	263·1	265·3	266·9	267·5	266·0	263·7	261·8	259·0	257·5	256·4	257·8	259·7	263·0	267·0	271·5
$\odot$'s L. Merc. ...	332·2	344·1	0·3	18·4	37·3	56·5	74·3	89·8	100·5	102·9	96·2	92·2	98·5	110·6	126·8	144·3	162·2	179·4
+·4 Jup. ...	69·7	71·2	72·8	74·7	76·7	78·8	81·0	83·2	85·6	87·9	90·1	92·5	94·7	97·0	99·0	101·0	102·8	104·6
Ven. ...	320·1	332·1	344·2	356·2	8·1	20·2	32·3	44·5	57·2	68·7	80·7	92·6	105·2	117·3	129·8	142·0	154·2	166·8
Sat. ...	327·7	328·7	329·8	320·8	331·6	332·3	333·0	333·1	333·3	333·5	333·2	332·8	332·5	331·8	331·0	330·2	329·4	328·7
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1908 Mars ...	40·5	47·3	54·0	60·5	67·0	73·6	80·0	86·6	92·9	99·4	105·8	112·2	118·7	125·0	131·4	137·8	144·1	150·5
$\odot$'s L. Merc. ...	337·6	355·4	14·1	33·0	51·3	67·6	79·8	84·7	79·5	73·7	77·9	89·4	104·7	122·3	140·4	158·2	174·8	188·8
+·2 Jup. ...	99·5	100·1	101·0	102·0	103·4	104·9	106·8	108·8	110·7	112·8	115·0	117·2	119·4	121·6	123·8	126·1	128·2	130·3
Ven. ...	44·3	54·9	64·2	73·3	80·9	87·2	90·0	89·8	85·1	78·7	73·7	72·7	75·6	81·2	88·6	97·4	107·1	117·5
Sat. ...	339·1	340·3	341·4	342·6	343·5	344·3	345·3	345·7	346·2	346·7	346·5	346·4	346·3	345·7	345·0	344·4	343·6	342·9
1909 Mars ...	277·6	284·1	290·7	297·1	303·3	309·4	315·0	320·6	325·7	330·3	334·4	337·3	339·2	339·9	339·1	337·1	334·4	332·2
$\odot$'s L. Merc. ...	350·8	9·4	27·8	44·9	58·7	65·8	62·6	55·5	57·1	67·4	82·7	99·7	118·1	136·3	153·6	168·5	179·6	182·8
—1 Jup. ...	131·4	130·9	130·9	130·8	131·3	132·1	133·2	134·5	136·0	137·6	139·4	141·4	143·4	145·5	147·6	149·8	152·0	154·2
Ven. ...	354·6	7·1	19·4	31·7	44·0	56·3	68·6	80·7	92·9	105·1	117·5	129·4	142·2	153·7	165·6	177·6	189·7	201·5
Sat. ...	350·5	351·8	353·0	354·3	355·4	356·4	357·5	358·2	358·8	359·6	359·7	359·9	0·1	359·8	359·4	358·9	358·2	357·5

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·0	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

mean Sunrise for every ten days from A.D. 1900 to A.D. 1909.

180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
174·4 −2·2 O 9 Pur 25	184·3 −2·1 O 19 Aipp 4	194·1 −1·9 O 29 Aipp 14	204·0 −1·7 N 8 Aipp 24	213·8 −1·5 N 18 Kart 4	223·7 −1·2 N 28 Kart 14	233·5 −0·9 D 8 Kart 24	243·4 −0·5 D 18 Marg 5	253·3 −0·1 D 28 Marg 15		263·1 +0·3 Ja 7 Marg 25	273·0 +0·6 Ja 17 Tai 5	282·8 +1·0 Ja 27 Tai 15	292·7 +1·3 F 6 Tai 25	302·5 +1·6 F 16 Masi 6	312·4 +1·8 F 26 Masi 16	322·2 +2·0 Mr 8 Masi 26	332·1 +2·1 Mr 18 Pang 6	342·0 +2·2 Mr 28 Pang 16	351·8 +2·2 Ap 7 Pang 26
104·7	110·2	115·6	120·6	125·3	129·7	133·6	136·5	139·0	**01**	140·5	140·7	139·5	137·4	134·1	130·4	126·6	123·7	121·7	121·2
190·4	205·7	217·1	220·3	215·9	209·3	212·1	222·6	237·3		254·3	271·9	289·3	305·7	319·6	328·0	327·1	319·4	318·4	326·7
225·0	226·9	228·9	231·1	233·3	235·4	237·7	240·0	242·3		244·5	246·7	248·9	250·9	252·8	254·6	256·2	257·6	258·8	259·7
127·9	139·4	150·6	162·5	174·4	186·4	198·6	210·8	223·0		235·3	248·1	260·4	273·0	285·5	298·1	310·5	322·9	335·5	347·9
245·1	246·0	246·8	247·7	248·7	249·7	250·8	252·0	253·2		254·3	255·4	256·5	257·7	258·5	259·4	260·3	260·9	261·4	262·0
214·0	221·1	228·3	235·6	243·0	250·5	258·1	265·7	273·3	**02**	281·2	289·0	296·7	304·7	312·6	320·6	328·4	336·3	343·9	351·6
198·4	205·4	202·7	195·2	194·7	203·3	217·1	233·2	249·4		268·1	284·8	299·1	309·1	310·7	303·5	299·9	306·3	319·0	335·4
252·4	253·7	255·7	257·2	258·8	260·9	263·1	265·3	267·5		269·8	272·2	274·4	276·7	279·0	281·3	283·4	285·4	287·4	289·1
213·0	224·0	236·4	247·8	258·9	268·4	279·6	289·4	297·9		304·6	309·3	310·4	307·1	301·0	296·0	295·5	296·5	301·5	308·6
255·6	256·2	256·9	257·6	258·6	259·7	260·7	261·8	262·9		264·1	265·3	266·5	267·7	268·7	269·6	270·6	271·3	272·1	272·7
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18, 19	28,29,	Ap 7,8
119·6	125·4	131·2	136·7	142·2	147·5	152·5	157·1	161·4	**03**	165·2	168·7	171·1	172·8	173·2	172·5	170·4	167·0	163·2	160·1
188·1	180·6	178·2	185·3	198·2	214·1	231·2	248·7	265·2		280·1	291·1	294·1	287·8	282·7	287·1	298·8	314·6	332·7	351·1
283·7	284·1	284·8	285·9	287·1	288·5	290·3	292·2	294·4		296·5	298·7	301·0	303·3	305·7	308·1	310·5	312·9	315·3	317·5
160·1	172·6	185·1	197·5	210·1	222·6	235·3	247·9	260·7		273·2	285·8	298·5	311·1	323·5	336·2	348·3	0·6	12·9	24·9
266·3	266·8	267·4	268·0	268·9	269·9	270·8	271·9	273·0		274·1	275·3	276·5	277·7	278·8	279·8	281·0	281·9	282·7	283·5
230·9	238·0	245·2	252·6	259·9	267·5	275·1	282·8	290·6	**04**	298·4	306·3	314·1	321·8	329·5	337·3	344·9	352·4	0·1	7·5
161·6	166·3	178·0	193·3	210·6	226·6	244·4	260·0	272·4		277·8	274·0	266·5	268·2	278·6	292·8	310·2	328·3	346·3	4·5
320·8	320·0	319·7	319·4	319·3	319·8	320·7	322·0	323·4		324·9	326·7	328·6	330·8	333·1	335·4	337·8	340·2	342·6	345·0
142·4	145·7	150·1	157·6	166·5	176·3	186·6	197·6	208·9		220·4	232·5	244·5	256·7	268·8	281·0	293·0	305·5	317·8	330·2
277·5	277·9	278·2	278·6	279·4	280·1	281·0	282·1	283·2		284·2	285·4	286·6	287·7	288·9	290·1	291·3	292·2	293·2	294·2
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
132·3	138·4	143·9	150·4	156·2	161·9	167·6	172·3	178·5	**05**	183·8	188·8	193·6	197·9	201·9	205·6	208·6	210·8	211·8	211·8
158·0	172·5	189·3	206·8	223·8	236·8	253·3	261·0	259·7		252·0	250·4	258·3	271·8	288·2	306·1	324·2	342·1	358·2	10·7
2·0	0·6	359·3	358·0	357·0	356·3	355·8	355·8	356·1		356·6	357·5	358·8	0·2	2·0	3·8	5·9	8·0	10·3	12·5
197·3	209·7	221·9	234·2	246·5	258·7	270·9	283·1	295·2		306·9	318·5	329·7	340·4	350·9	0·5	8·9	16·2	21·7	23·3
289·2	289·3	289·4	289·5	290·2	290·8	291·4	292·4	293·5		294·5	295·7	296·9	298·1	299·3	300·5	301·7	302·8	303·8	305·0
249·8	256·8	263·9	270·9	278·4	285·8	293·3	300·8	308·3	**06**	315·9	323·4	330·9	338·3	345·8	353·2	0·9	7·8	15·1	22·1
168·0	185·5	202·8	219·5	233·9	243·8	245·6	238·4	234·1		239·2	251·2	266·7	284·1	301·9	319·8	336·4	349·8	357·1	354·8
41·9	41·1	40·1	38·9	37·5	35·9	34·9	35·7	32·9		32·1	31·8	31·9	32·2	33·0	34·0	35·2	36·7	38·4	40·3
142·1	154·2	166·4	178·8	191·1	203·6	216·3	228·7	241·2		253·9	266·6	279·1	291·9	304·4	316·9	329·4	342·0	354·5	6·7
301·7	301·6	301·4	301·3	301·7	302·2	302·5	303·4	304·2		305·2	306·4	307·6	308·7	309·9	311·1	312·3	313·5	314·7	316·0
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
145·0	151·3	157·5	163·6	169·9	175·9	182·0	188·1	194·2	**07**	200·2	206·2	212·2	217·9	223·6	229·3	234·7	240·0	245·2	250·1
183·7	200·7	215·5	226·6	230·0	224·6	218·3	221·6	232·3		247·4	264·5	282·1	299·7	316·3	330·1	338·1	337·4	329·8	328·8
76·7	77·0	77·1	76·8	76·2	75·3	74·2	72·7	71·5		70·4	69·1	68·1	67·2	66·8	66·8	66·9	67·3	68·1	68·9
217·9	224·7	229·2	230·8	228·3	222·7	217·3	215·1	217·1		221·8	229·0	237·7	247·2	257·5	268·4	279·5	290·8	302·5	314·2
314·3	314·0	313·6	313·4	313·6	313·9	314·2	314·9	315·7		316·4	317·4	318·5	319·6	320·9	322·2	323·5	324·7	325·9	327·2
277·1	282·7	288·8	295·2	301·6	308·3	315·0	321·8	328·7	**08**	335·7	342·7	349·5	356·5	3·4	10·2	17·0	23·8	30·5	37·2
195·6	208·2	215·4	211·3	203·8	204·8	212·8	226·6	243·3		260·7	278·3	294·8	309·5	319·2	320·6	312·2	309·7	316·8	329·7
106·1	107·6	108·6	109·3	109·8	109·9	109·5	109·1	108·4		107·4	106·3	105·1	103·6	102·5	101·4	100·4	99·8	99·5	99·6
179·3	191·8	204·2	216·8	229·3	242·1	254·6	266·9	279·5		291·9	304·5	316·6	328·9	341·1	353·1	4·7	16·4	27·9	38·8
328·0	327·4	326·9	326·3	326·4	326·4	326·4	326·9	327·5		328·0	328·9	329·9	330·9	331·1	332·3	334·5	335·8	337·1	338·4
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
156·8	163·3	169·7	176·0	182·5	188·9	195·3	201·8	208·2	**09**	215·0	221·3	227·9	234·5	241·2	247·7	254·5	261·0	267·6	274·3
197·8	197·5	189·8	187·2	193·9	206·7	222·1	239·5	257·0		273·7	288·9	300·2	303·9	297·9	292·6	296·3	307·9	323·8	341·6
132·3	134·0	135·7	137·3	138·7	139·8	140·6	141·1	141·2		141·1	140·7	139·9	138·7	137·6	136·4	135·1	133·8	132·7	131·8
128·3	139·6	151·2	162·9	174·6	186·8	199·1	211·4	223·6		236·0	248·7	261·0	273·7	286·1	298·7	311·1	323·5	336·1	348·3
342·2	341·4	340·6	339·9	339·6	339·4	339·1	339·5	339·8		340·1	340·9	341·8	342·6	343·7	344·8	346·0	347·3	348·6	349·8
330·5	330·3	331·6	332·8	336·0	339·5	343·8	348·7	353·5	**10**	358·7	4·2	9·8	15·7	21·4	27·5	33·6	39·7	45·8	51·9
175·6	171·2	175·1	186·5	201·5	218·4	235·6	252·8	268·6		281·1	288·1	283·9	272·7	277·6	287·1	301·6	318·9	337·0	355·8
156·4	158·6	160·6	162·6	164·5	166·1	167·6	168·9	169·9		170·9	171·4	171·5	171·4	170·9	170·2	169·1	168·0	166·7	165·5
213·5	225·5	236·7	248·1	259·0	269·5	279·5	288·9	297·0		303·5	306·9	307·2	303·4	297·0	292·4	291·8	294·8	300·7	308·2
356·7	355·9	355·2	354·3	353·8	353·4	352·8	352·9	352·9		352·9	353·6	354·2	354·8	355·8	356·9	358·0	359·2	0·4	1·6

Mag.	P.Phal.	U.Phal.	Hast.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P.Ash.	U.Ash.	Srav.	Dan.	Satab.	P.Bhad.	U.Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
⊙'s Mean L.	357·0	6·9	16·7	26·6	36·4	46·3	56·1	66·0	75·9	85·7	95·6	105·4	115·3	125·1	135·0	144·8	154·7	164·6
Corrn. for do.	+2·1	+2·0	+1·9	+1·7	+1·4	+1·1	+0·8	+0·4	+0·0	−0·3	−0·7	−1·1	−1·4	−1·6	−1·9	−2·0	−2·1	−2·2
English date.	Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jl 2	Jl 12	Jl 22	Au 1	Au 11	Au 21	Au 31	S 10	S 20	S 30
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Ava n	Pur	Pur
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1910 Mars ...	55·6	61·8	68·0	74·3	80·5	86·8	93·0	99·7	105·6	111·9	118·2	124·4	130·8	137·1	143·6	149·9	156·3	162·9
⊙'s L. Merc. ...	6·8	24·1	37·9	45·9	44·1	36·6	37·1	46·9	61·8	79·1	97·4	116·0	133·6	149·5	161·6	166·4	161·5	154·8
+·6 Jup. ...	164·8	163·7	162·5	161·6	161·1	161·0	161·1	161·3	162·3	163·4	164·6	166·1	167·9	169·7	171·6	173·7	175·7	177·9
Ven. ...	313·6	322·7	332.9	343·6	354·3	5·4	17·0	28·7	40·2	52·2	64·0	75·7	87·7	99·8	112·0	124·2	136·6	148·5
Sat. ...	2·3	3·6	4·9	6·3	7·5	8·6	9·9	10·9	11·8	12·7	13·1	13·6	13·9	13·7	13·6	13·5	12·9	12·2
1911 Mars ...	298·4	305·7	313·0	320·5	327·7	335·1	342·2	349·1	356·2	2·9	9·3	15·4	21·3	26·9	31·9	36·4	39·7	42·9
⊙'s L. Merc. ...	16·3	25·6	25·9	18·5	18·7	24·7	38·7	56·1	74·4	93·2	111·4	128·1	141·8	148·9	146·6	139·0	139·0	147·7
+·4 Jup. ...	198·8	197·6	197·0	194·9	193·8	192·8	191·9	191·4	191·4	191·4	191·7	192·6	193·5	194·9	196·3	198·0	199·7	201·7
Ven. ...	31·8	43·6	55·7	67·2	78·9	90·3	100·9	111·7	122·0	131·6	140·8	147·9	153·7	156·6	156·0	151·2	145·1	140·2
Sat. ...	14·3	15·7	17·1	18·5	19·8	21·1	22·4	23·7	25·2	26·5	26·9	27·2	27·6	27·7	27·9	28·0	27·5	27·1
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1912 Mars ...	70·9	76·5	82·1	87·9	93·7	99·5	105·6	111·5	117·7	123·8	130·1	136·3	142·4	148·9	155·4	161·8	168·3	174·8
⊙'s L. Merc. ...	8·3	1·1	357.1	3·1	15·9	32·8	51·1	69·1	88·8	106·1	120·8	130·2	130·8	123·2	120·8	127·7	140·9	157·1
+·1 Jup. ...	232·4	231·0	230·6	229·9	228·6	227·3	225·9	224·8	223·7	222·9	222·2	222·0	222·0	222·4	223·3	224·4	225·4	226·8
Ven. ...	336·8	349·1	1·4	13·6	25·8	37·1	50·4	62·6	74·8	87·2	99·3	111·6	124·6	136·2	148·5	160·6	173·1	185·5
Sat. ...	26·9	28·2	29·5	30·8	32·1	33·4	34·8	36·1	37·3	38·5	39·4	40·2	41·2	41·6	42·1	42·5	42·4	42·3
1913 Mars ...	316·3	323·9	331·7	339·3	347·0	354·5	1·9	9·3	16·4	23·6	31·0	37·3	43·8	50·2	56·5	62·4	68·0	73·2
⊙'s L. Merc. ...	338·9	342·2	353·7	9·3	27·6	46·7	65·4	83·7	98·4	110·8	114·1	106·3	103·2	107·7	119·8	135·3	152·9	170·6
—·1 Jup. ...	264·0	264·6	264·8	264·7	264·4	263·6	262·6	261·4	260·1	258·8	257·5	256·3	255·5	254·7	254·4	254·4	254·6	255·3
Ven. ...	19·4	14·7	9·1	4·3	4·2	7·6	13·5	21·2	30·1	39·9	50·3	60·8	71·9	83·2	94·9	106·6	118·5	130·4
Sat. ...	39·5	40·7	41·9	43·1	44·5	45·9	47·3	48·6	49·9	51·3	52·3	53·4	54·4	55·2	55·9	56·4	56·7	56·9
Eng. Date.	Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jl 2	Jl 12	Jl 22	Au 1	Au 11	Au 21	Au 31	S 10	S 20	S 30
1914 Mars ...	88·7	93·0	97·9	103·0	108·4	114·1	119·4	125·1	131·0	137·0	143·0	149·1	155·5	161·7	168·3	174·8	181·4	188·0
⊙'s L. Merc. ...	333·3	348·4	6·3	25·3	44·2	62·5	78·6	90·8	95·4	90·2	84·4	88·4	100·0	115·5	132·9	150·8	168·5	184·9
+·6 Jup. ...	293·9	295·4	296·7	297·7	298·9	299·0	299.2	298·6	298·1	297·2	296·2	294·9	293·6	292·4	231·2	290·1	289·2	288·7
Ven. ...	14·7	27·1	39·5	51·6	63·7	75·7	87·6	99·5	111·1	123·1	134·7	146·3	157·6	168·9	179·7	190·1	199·8	209·1
Sat. ...	52·4	53·5	54·8	55·9	57·2	58·5	59·9	61·2	62·5	63·9	64·8	65·6	66·6	67·9	69·1	70·3	70·7	71·2
1915 Mars ...	333·7	341·6	349·3	356·8	4·6	12·1	19·4	26·8	34·0	41·1	48·0	54·8	61·6	68·1	74·5	80·8	86·8	92·7
⊙'s L. Merc. ...	344·3	1·9	20·8	39·2	56·1	69·9	76·5	73·1	66·1	68·3	78·5	93·3	111·8	129·0	147·0	164·1	179·1	189·2
+·4 Jup. ...	322·2	324·4	326·4	328·4	330·0	331·6	332·8	333·7	334·4	334·8	334·9	334·4	333·7	332·7	331·5	330·2	328·8	327·4
Ven. ...	320·7	332·5	344·6	356·8	8·5	20·8	32·9	44·9	57·0	69·1	81·3	93·4	105·7	118·0	130·4	142·6	155·0	167·4
Sat. ...	65·7	66·7	67·6	68·6	69·8	71·1	72·3	73·7	75·1	76·4	77·7	79·0	80·3	81·3	82·4	83·5	84·2	84·8
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jl 1	Jl 11	Jl 21	Jl 31	Au 10	Au 20	Au 30	S 9	S 19	S 29
1916 Mars ...	110·8	113·2	116·4	120·1	124·4	129·2	134·0	139·3	145·3	151·0	156·7	162·6	168·7	175·1	181·6	188·2	194·7	201·6
⊙'s L. Merc. ...	357·6	14·9	33·4	47·8	56·6	55·8	48·3	47·6	56·5	71·1	88·3	106·4	124·8	142·5	158·4	170·5	175·8	171·1
+·1 Jup. ...	349·9	352·3	354·7	357·1	359·3	1·4	3·5	5·3	7·0	8·5	9·6	10·5	11·1	11·3	11·1	10·6	10·0	8·9
Ven. ...	34·4	54·8	64·3	73·0	80·0	85·5	88·4	86·7	82·9	75·3	70·7	71·1	74·5	80·3	88·3	97·1	107·2	117·6
Sat. ...	79·2	79·9	80·7	81·3	82·4	83·6	84·8	86·1	87·4	88·7	90·1	91·5	92·8	94·0	95·1	96·4	97·3	98·1
Eng. Date.	Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jl 2	Jl 12	Jl 22	Au 1	Au 11	Au 21	Au 31	S 10	S 20	S 30
1917 Mars ...	350·4	358·1	5·7	13·1	20·6	28·0	35·2	42·3	49·5	56·3	63·3	70·0	76·5	83·1	89·5	96·0	102·1	108·1
⊙'s L. Merc. ...	12·2	27·2	36·6	36·9	29·3	27·8	35·8	50·1	67·0	85·6	104·0	122·1	138·8	151·9	158·7	156·0	148·5	148·9
+·8 Jup. ...	17·7	20·1	22·5	24·9	27·3	29·7	32·0	34·4	36·5	38·6	40·5	42·2	43·8	45·0	46·1	46·8	47·2	47·3
Ven. ...	356·5	8·8	21·2	33·5	45·9	58·1	70·2	82·5	94·4	106·9	119·1	131·2	143.3	155·3	167·3	179·1	191·4	203·0
Sat. ...	92·9	93·4	93·9	94·5	95·4	96·3	97·4	98·6	99·8	101·1	102·4	103·7	105·1	106·3	107·6	108·9	110·0	111·0
1918 Mars ...	141·7	141·1	141·3	143·1	145·5	148·9	152·7	157·2	162·0	167·3	172·9	178·5	184·5	190·7	197·2	203·8	210·4	217·4
⊙'s L. Merc. ...	14·3	18·4	11·9	8·1	14·2	27·5	44·0	62·5	81·3	99·7	116·9	131·4	140·8	140·7	133·1	130·8	138·2	151·2
+·6 Jup. ...	45·3	47·5	49·6	51 8	53·7	56·4	58·7	61·0	63·4	65·7	68·0	70·2	72·2	73·9	75·8	77·5	78·9	80·0
Ven. ...	313·1	322·8	332·8	343·7	354·6	5·9	17·3	28·9	40·7	52·6	64·6	76·2	88·3	100·3	112·5	124·7	136·9	149·2
Sat. ...	106·6	106·9	107·2	107·6	108·3	109·1	109·8	110·9	112·1	113·2	114·5	116·8	117·0	118·3	119·6	121·0	122·2	123·3
1919 Mars ...	5·5	13·0	20·4	27·6	34·8	41·9	48·9	56·1	62·8	69·8	76·4	82·9	89·7	96·0	102·7	109·0	115·2	121·3
⊙'s L. Merc. ...	354·9	349·0	352·9	5·0	20·8	39·0	58·0	76·9	94·5	110·2	121·2	124·0	117·5	112·9	118·2	130·1	146·0	163·1
+·3 Jup. ...	73·9	75·2	76·9	78·6	80·5	82·5	84·6	86·8	89·1	91·4	93·6	95·9	98·3	100·5	102·6	104·7	106·7	108·4
Ven. ...	32·3	44·2	56·0	67·7	79·2	90·4	101·4	112·0	121·9	131·3	139·8	147·0	152·0	154·3	152·7	147·1	139·6	137·6
Sat. ...	119·5	120·6	120·5	120·6	121·0	121·6	122·1	122·8	123·6	124·3	125·4	126·5	127·7	129·0	130·3	131·5	132·8	134·1

Mesh.	Vrsh.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	330	360	13·3	26·7	40·0	53·3	66·7	80·0	93·3	106·7	120·0

ean Sunrise for every ten days from A.D. 1910 to A.D. 1919.

180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
174·4	184·3	194·1	204·0	213·8	223·7	233·5	243·4	253·3		263·1	273·0	282·8	292·7	302·5	312·4	322·2	332·1	342·0	351·8
−2·2	−2·1	−1·9	−1·7	−1·5	−1·2	−0·9	−0·5	−0·1		+0·3	+0·6	+1·0	+1·3	+1·6	+1·8	+2·0	+2·1	+2·2	+2·2
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
Pur	Aipp	Aipp	Aipp	Kart	Kart	Kart	Marg	Marg		Marg	Tai	Tai	Tai	Masi	Masi	Masi	Pang	Pang	Pang
25	4	14	24	4	14	24	5	15		25	5	15	25	6	16	26	6	16	26
169·4	176·0	182·5	189·0	195·7	202·4	209·3	216·1	223·0	**11**	229·9	236·8	243·9	250·9	258·2	265·3	272·6	280·0	287·2	294·5
157·6	168·1	182·6	199·3	216·7	233·9	249·7	263·0	270·5		269·0	260·8	260·0	268·4	282·1	298·7	316·9	335·1	353·1	9·1
80·1	182·3	184·4	186·6	188·8	190·9	192·8	194·6	196·3		197·9	199·4	200·3	201·2	201·6	201·7	201·6	201·3	200·5	199·5
61·0	173·5	186·0	198·6	211·0	223·7	236·2	248·9	261·5		274·1	286·8	299·3	311·9	324·3	336·9	349·2	1·5	13·8	25·8
11·5	10·6	9·8	9·0	8·3	7·7	7·1	6·8	6·6		6·4	6·8	7·1	7·6	8·4	9·3	10·2	11·4	12·6	13·8
44·8	45·7	44·9	42·7	40·1	37·0	34·5	32·8	32·0	**12**	32·7	34·4	37·0	40·3	44·0	48·1	52·1	57·6	62·9	68·1
61·7	178·3	195·8	213·8	229·5	243·6	252·9	254·2	246·8		243·0	248·8	261·3	277·1	294·5	312·7	330·3	347·2	0·6	7·8
03·8	205·8	207·9	210·2	212·4	214·6	216·8	219·0	221·1		223·2	225·0	226·7	228·3	229·8	230·9	231·8	232·4	232·7	232·7
139·9	142·4	149·4	157·1	166·2	176·2	186·5	197·7	209·2		220·7	232·2	244·8	257·0	269·1	281·5	293·5	305·8	318·2	330·7
26·7	25·9	25·1	24·4	23·6	22·9	22·1	21·6	21·1		20·7	20·8	20·9	20·9	21·6	22·2	23·0	24·0	25·2	26·2
9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
181·4	188·2	195·0	201·8	208·6	216·1	223·1	230·2	237·4	**13**	244·5	251·9	259·3	266·8	274·3	281·9	289·5	297·1	304·9	312·6
174·4	192·0	208·6	224·0	235·2	239·1	233·6	227·3	230·2		240·8	255·7	272·9	290·8	308·4	325·1	339·5	348·3	348·0	340·4
228·6	230·4	232·4	234·5	236·7	238·9	241·1	243·3	245·7		247·9	250·1	252·3	254·3	256·3	258·2	259·9	261·5	262·8	263·6
197·8	210·1	222·4	234·7	247·0	259·4	271·4	283·5	295·4		307·2	319·4	329·8	340·5	350·6	0·2	8·4	14·9	19·6	20·6
42·1	41·2	40·2	39·2	38·6	38·1	37·6	36·9	36·3		35·5	35·3	35·2	34·9	35·4	35·8	36·2	37·0	37·9	38·9
78·1	82·5	86·3	89·4	91·7	92·7	92·9	91·4	88·8	**14**	85·5	81·7	78·5	76·0	74·9	75·3	76·9	79·3	82·5	86·1
88·0	204·2	216·9	223·5	221·1	213·2	212·8	221·3	234·8		251·4	269·1	286·7	303·6	318·5	328·9	331·2	324·4	320·5	326·2
256·2	257·6	259·2	260·8	262·5	264·5	266·6	268·0	271·0		273·3	275·6	278·0	280·3	282·7	284·9	287·1	289·2	291·2	293·2
42·4	154·7	166·9	179·4	191·7	204·1	216·8	229·2	241·7		254·4	267·1	279·6	292·4	305·3	318·2	329·9	342·5	355·0	7·2
57·0	56·6	56·1	55·7	55·9	54·1	53·3	52·5	51·8		51·0	50·6	50·1	49·7	49·7	49·8	49·8	50·5	51·2	51·9
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
94·9	201·7	208·6	215·6	222·8	230·1	237·4	244·7	252·1	**15**	259·7	267·3	275·1	282·7	290·4	298·3	306·2	314·1	321·9	329·8
198·5	207·1	206·2	198·6	196·5	203·6	216·4	232·2	249·7		267·1	284·0	299·2	310·3	313·8	307·5	301·7	306·7	318·6	334·6
2[illegible]3·5	288·8	289·3	290·1	291·3	292·6	294·2	295·9	298·2		300·3	302·4	304·8	307·1	309·4	311·8	314·3	316·7	319·1	321·4
21[illegible]·1	223·8	227·5	228·7	224·6	218·5	213·6	212·6	215·4		220·9	228·3	237·2	247·1	257·6	268·5	279·6	291·1	302·8	314·7
71·5	71·3	71·2	71·0	70·3	69·5	68·9	68·1	67·4		66·5	65·9	65·2	64·5	64·4	64·1	64·0	64·4	64·9	65·2
98·4	103·8	108·9	113·4	117·9	121·8	124·9	127·1	128·4	**16**	128·6	127·5	125·3	122·0	118·0	114·2	111·4	109·7	109·2	110·1
91·7	185·1	180·3	184·8	196·4	211·7	228·6	245·9	262·9		278·6	291·2	296·8	292·8	294·4	296·2	306·5	321·2	338·1	343·3
323·3	325·6	324·9	324·4	324·3	324·7	325·3	326·3	327·6		329·2	329·8	332·7	334·8	337·0	339·2	341·6	344·0	346·4	348·8
7[illegible]9	192·4	205·0	217·5	229·9	242·5	255·5	267·7	280·1		292·6	304·9	317·2	329·3	341·5	353·5	5·1	17·0	23·1	39·2
85·4	85·5	85·7	85·8	85·3	84·9	84·4	83·6	82·8		82·0	81·1	80·3	79·4	79·1	78·7	78·4	78·5	78·5	78·6
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
208·5	215·6	222·6	229·9	237·1	244·6	252·0	259·6	267·2	**17**	275·0	282·9	290·6	298·6	306·4	314·1	322·1	330·0	338·0	345·6
164·5	166·7	176·6	191·1	207·5	224·9	242·0	258·2	271·7		279·5	278·4	270·8	267·3	277·2	290·9	307·4	323·3	342·1	0·5
7·8	6·4	5·0	3·8	2·6	1·7	1·0	0·9	0·9		1·4	2·1	3·2	4·4	6·1	7·9	9·7	11·9	14·1	16·4
128·6	139·9	151·5	163·2	175·3	187·3	199·5	211·7	224·0		236·5	249·2	261·5	274·2	287·0	299·0	311·6	324·1	336·6	349·0
98·9	99·3	99·7	100·1	99·8	99·6	99·4	98·7	98·0		97·4	96·6	96·9	95·0	94·3	93·7	93·0	92·9	92·7	92·5
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
114·1	119·9	125·6	131·0	136·1	141·2	145·8	149·9	153·6	**18**	156·4	158·8	159·9	160·2	158·6	155·8	152·6	148·4	145·2	142·4
157·8	171·9	188·3	205·6	222·9	239·4	253·3	262·5	263·0		255·6	252·3	258·5	271·3	287·4	305·1	323·2	341·1	357·9	11·3
47·0	46·4	45·5	44·3	43·1	36·7	40·3	39·2	38·1		37·3	36·9	36·7	37·0	37·6	38·5	39·6	40·9	42·5	44·3
215·0	226·7	237·8	249·2	260·1	270·5	280·2	289·2	296·8		302·2	304·8	303·7	298·4	292·1	289·1	290·3	294·1	300·8	308·7
111·9	112·6	113·2	113·8	113·9	113·9	114·0	113·9	113·1		112·5	111·7	110·9	110·2	109·4	108·6	107·8	107·4	106·9	106·6
224·4	231·4	238·6	246·0	253·5	260·9	268·7	276·3	283·9	**19**	291·8	299·6	307·5	315·0	323·2	331·0	338·8	346·6	354·2	1·4
167·3	184·7	202·1	218·7	233·7	244·6	248·1	242·0	236·4		239·7	250·8	265·9	283·2	301·3	319·0	334·8	350·2	358·9	358·6
80·9	81·1	81·8	81·6	81·2	80·3	79·0	78·1	76·8		75·6	74·3	73·2	72·2	71·6	71·3	71·3	71·5	72·3	73·3
161·5	174·0	186·4	198·7	211·5	224·1	236·7	249·4	262·0		274·7	287·3	299·6	312·4	325·0	327·8	349·7	2·0	14·3	26·2
124·4	125·1	125·9	126·7	127·1	127·3	127·7	127·7	127·8		127·9	126·3	125·6	124·9	124·0	123·2	122·4	122·4	120·5	119·6
127·5	133·5	139·5	145·2	151·0	156·5	162·0	167·1	172·2	**20**	177·2	181·7	185·6	189·3	192·3	194·4	195·7	195·6	194·3	191·7
180·9	198·0	213·9	226·3	232·3	228·9	221·7	222·1	231·1		245·1	261·8	279·4	298·0	314·1	328·9	339·1	341·2	334·4	331·7
110·0	111·3	112·5	113·4	114·1	114·4	114·4	114·1	113·3		112·4	111·3	109·9	108·6	107·4	106·2	105·2	104·4	104·0	103·9
138·2	141·9	148·5	156·8	165·8	176·1	186·9	198·0	209·3		221·0	233·0	245·3	257·5	269·6	282·0	294·1	306·8	318·8	331·2
135·4	136·3	137·4	138·4	139·2	139·9	140·6	140·9	141·1		141·3	140·8	140·4	140·1	139·4	138·6	137·9	137·1	136·4	135·6

Mag.	P.Phal.	U.Phal.	Hasta.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P.Ash.	U.Ash.	Srav.	Dan.	Satab.	P.Bhad.	U.Bhad.	Revati.
133·3	146·7	160·0	173·3	186·7	200·0	213·3	226·7	240·0	253·3	266·7	280·0	293·3	306·7	320·0	333·3	346·7	360·0

TABLE XIX :—Ghatikas and Palas (Naligais and Vinadis) as Fractions of a day.

N.B.—The same table will serve for minutes and seconds as fractions of an **Hour** or a **Degree**.

Palas.	Ghatikas. 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0	...	·0167	·0333	·0500	·0667	·0833	·1000	·1167	·1333	·1500	·1667	·1833	·2000	·2167	·2333	·2500	·2667	·2833	·3000	·3167
1	·0003	·0169	·0336	·0503	·0669	·0836	·1003	·1169	·1336	·1503	·1669	·1836	·2003	·2169	·2336	·2503	·2669	·2836	·3003	·3169
2	·0005	·0172	·0339	·0505	·0672	·0839	·1005	·1172	·1339	·1505	·1672	·1839	·2005	·2172	·2339	·2505	·2672	·2839	·3005	·3172
3	·0008	·0175	·0342	·0508	·0675	·0842	·1008	·1175	·1342	·1508	·1675	·1842	·2008	·2175	·2342	·2508	·2675	·2842	·3008	·3175
4	·0011	·0178	·0344	·0511	·0678	·0844	·1011	·1178	·1344	·1511	·1678	·1844	·2011	·2178	·2344	·2511	·2678	·2844	·3011	·3178
5	·0014	·0180	·0347	·0514	·0680	·0847	·1014	·1180	·1347	·1514	·1680	·1847	·2014	·2180	·2347	·2514	·2680	·2847	·3014	·3180
6	·0017	·0183	·0350	·0517	·0683	·0850	·1017	·1183	·1350	·1517	·1683	·1850	·2017	·2183	·2350	·2517	·2683	·2850	·3017	·3183
7	·0019	·0186	·0353	·0519	·0686	·0853	·1019	·1186	·1353	·1519	·1686	·1853	·2019	·2186	·2353	·2519	·2686	·2853	·3019	·3186
8	·0022	·0189	·0355	·0522	·0689	·0855	·1022	·1189	·1355	·1522	·1689	·1855	·2022	·2189	·2355	·2522	·2689	·2855	·3022	·3189
9	·0025	·0192	·0358	·0525	·0692	·0858	·1025	·1192	·1358	·1525	·1692	·1858	·2025	·2192	·2358	·2525	·2692	·2858	·3025	·3192
10	·0028	·0194	·0361	·0528	·0694	·0861	·1028	·1194	·1361	·1528	·1694	·1861	·2028	·2194	·2361	·2528	·2694	·2861	·3028	·3194
11	·0030	·0197	·0364	·0530	·0697	·0864	·1030	·1197	·1364	·1530	·1697	·1864	·2030	·2197	·2364	·2530	·2697	·2864	·3030	·3197
12	·0033	·0200	·0367	·0533	·0700	·0867	·1033	·1200	·1367	·1533	·1700	·1867	·2033	·2200	·2367	·2533	·2700	·2867	·3033	·3200
13	·0036	·0203	·0369	·0536	·0703	·0869	·1036	·1203	·1369	·1536	·1702	·1869	·2036	·2203	·2369	·2536	·2703	·2869	·3036	·3203
14	·0039	·0205	·0372	·0539	·0705	·0872	·1039	·1205	·1372	·1539	·1705	·1872	·2039	·2205	·2372	·2539	·2705	·2872	·3039	·3205
15	·0042	·0208	·0375	·0542	·0708	·0875	·1042	·1208	·1375	·1542	·1708	·1875	·2042	·2208	·2375	·2542	·2708	·2875	·3042	·3208
16	·0044	·0211	·0378	·0544	·0711	·0878	·1044	·1211	·1378	·1544	·1711	·1878	·2044	·2211	·2378	·2544	·2711	·2878	·3044	·3211
17	·0047	·0214	·0380	·0547	·0714	·0880	·1047	·1214	·1380	·1547	·1714	·1880	·2047	·2214	·2380	·2547	·2714	·2880	·3047	·3214
18	·0050	·0217	·0383	·0550	·0717	·0883	·1050	·1217	·1383	·1550	·1717	·1883	·2050	·2217	·2383	·2550	·2717	·2883	·3050	·3217
19	·0053	·0219	·0386	·0553	·0719	·0886	·1053	·1219	·1386	·1553	·1719	·1886	·2053	·2219	·2386	·2553	·2719	·2886	·3053	·3219
20	·0055	·0222	·0389	·0555	·0722	·0889	·1055	·1222	·1389	·1555	·1722	·1889	·2055	·2222	·2389	·2555	·2722	·2889	·3055	·3222
21	·0058	·0225	·0392	·0558	·0725	·0892	·1058	·1225	·1392	·1558	·1725	·1892	·2058	·2225	·2392	·2558	·2725	·2892	·3058	·3225
22	·0061	·0228	·0394	·0561	·0728	·0894	·1061	·1228	·1394	·1561	·1728	·1894	·2061	·2228	·2394	·2561	·2728	·2894	·3061	·3228
23	·0064	·0230	·0397	·0564	·0730	·0897	·1064	·1230	·1397	·1564	·1730	·1897	·2064	·2230	·2397	·2564	·2730	·2897	·3064	·3230
24	·0067	·0233	·0400	·0567	·0733	·0900	·1067	·1233	·1400	·1567	·1733	·1900	·2067	·2233	·2400	·2567	·2733	·2900	·3067	·3233
25	·0069	·0236	·0403	·0569	·0736	·0903	·1069	·1236	·1403	·1569	·1736	·1903	·2069	·2236	·2403	·2569	·2736	·2903	·3069	·3236
26	·0072	·0239	·0405	·0572	·0739	·0905	·1072	·1239	·1405	·1572	·1739	·1905	·2072	·2239	·2405	·2572	·2739	·2905	·3072	·3239
27	·0075	·0242	·0408	·0575	·0742	·0908	·1075	·1242	·1408	·1575	·1742	·1908	·2075	·2242	·2408	·2575	·2742	·2908	·3075	·3242
28	·0078	·0244	·0411	·0578	·0744	·0911	·1078	·1244	·1411	·1578	·1744	·1911	·2078	·2244	·2411	·2578	·2744	·2911	·3078	·3244
29	·0080	·0247	·0414	·0580	·0747	·0914	·1080	·1247	·1414	·1580	·1747	·1914	·2080	·2247	·2414	·2580	·2747	·2914	·3080	·3247
30	·0083	·0250	·0417	·0583	·0750	·0917	·1083	·1250	·1417	·1583	·1750	·1917	·2083	·2250	·2417	·2583	·2750	·2917	·3083	·3250
31	·0086	·0253	·0419	·0586	·0753	·0919	·1086	·1253	·1419	·1586	·1753	·1919	·2086	·2253	·2419	·2586	·2753	·2919	·3086	·3253
32	·0089	·0255	·0422	·0589	·0755	·0922	·1089	·1255	·1422	·1589	·1755	·1922	·2089	·2255	·2422	·2589	·2755	·2922	·3089	·3255
33	·0092	·0258	·0425	·0592	·0758	·0925	·1092	·1258	·1425	·1592	·1758	·1925	·2092	·2258	·2425	·2592	·2758	·2925	·3092	·3258
34	·0094	·0261	·0428	·0594	·0761	·0928	·1094	·1261	·1428	·1594	·1761	·1928	·2094	·2261	·2428	·2594	·2761	·2928	·3094	·3261
35	·0097	·0264	·0430	·0597	·0764	·0930	·1097	·1264	·1430	·1597	·1764	·1930	·2097	·2264	·2430	·2597	·2764	·2930	·3097	·3264
36	·0100	·0267	·0433	·0600	·0767	·0933	·1100	·1267	·1433	·1600	·1767	·1933	·2100	·2267	·2433	·2600	·2767	·2933	·3100	·3267
37	·0103	·0269	·0436	·0603	·0769	·0936	·1103	·1269	·1436	·1603	·1769	·1936	·2103	·2269	·2436	·2603	·2769	·2936	·3103	·3269
38	·0105	·0272	·0439	·0605	·0772	·0939	·1105	·1272	·1439	·1605	·1772	·1939	·2105	·2272	·2439	·2605	·2772	·2939	·3105	·3272
39	·0108	·0275	·0442	·0608	·0775	·0942	·1108	·1275	·1442	·1608	·1775	·1942	·2108	·2275	·2442	·2608	·2775	·2942	·3108	·3275
40	·0111	·0278	·0444	·0611	·0778	·0944	·1111	·1278	·1444	·1611	·1778	·1944	·2111	·2278	·2444	·2611	·2778	·2944	·3111	·3278
41	·0114	·0280	·0447	·0614	·0780	·0947	·1114	·1280	·1447	·1614	·1780	·1947	·2114	·2280	·2447	·2614	·2780	·2947	·3114	·3280
42	·0117	·0283	·0450	·0617	·0783	·0950	·1117	·1283	·1450	·1617	·1783	·1950	·2117	·2283	·2450	·2617	·2783	·2950	·3117	·3283
43	·0119	·0286	·0453	·0619	·0786	·0953	·1119	·1286	·1453	·1619	·1786	·1953	·2119	·2286	·2453	·2619	·2786	·2953	·3119	·3286
44	·0122	·0289	·0455	·0622	·0789	·0955	·1122	·1289	·1455	·1622	·1789	·1955	·2122	·2289	·2455	·2622	·2789	·2955	·3122	·3289
45	·0125	·0292	·0458	·0625	·0792	·0958	·1125	·1292	·1458	·1625	·1792	·1958	·2125	·2292	·2458	·2625	·2792	·2958	·3125	·3292
46	·0128	·0294	·0461	·0628	·0794	·0961	·1128	·1294	·1461	·1628	·1794	·1961	·2128	·2294	·2461	·2628	·2794	·2961	·3128	·3294
47	·0130	·0297	·0464	·0630	·0797	·0964	·1130	·1297	·1464	·1630	·1797	·1964	·2130	·2297	·2464	·2630	·2797	·2964	·3130	·3297
48	·0133	·0300	·0467	·0633	·0800	·0967	·1133	·1300	·1467	·1633	·1800	·1967	·2133	·2300	·2467	·2633	·2800	·2967	·3133	·3300
49	·0136	·0303	·0469	·0636	·0803	·0969	·1136	·1303	·1470	·1636	·1803	·1969	·2136	·2303	·2469	·2636	·2803	·2969	·3136	·3303
50	·0139	·0305	·0472	·0639	·0805	·0972	·1139	·1305	·1472	·1639	·1805	·1972	·2139	·2305	·2472	·2639	·2805	·2972	·3139	·3305
51	·0142	·0308	·0475	·0642	·0808	·0975	·1142	·1308	·1475	·1642	·1808	·1975	·2142	·2308	·2475	·2642	·2808	·2975	·3142	·3308
52	·0144	·0311	·0478	·0644	·0811	·0978	·1144	·1311	·1478	·1644	·1811	·1978	·2144	·2311	·2478	·2644	·2811	·2978	·3144	·3311
53	·0147	·0314	·0480	·0647	·0814	·0980	·1147	·1314	·1480	·1647	·1814	·1980	·2147	·2314	·2480	·2647	·2814	·2980	·3147	·3314
54	·0150	·0317	·0483	·0650	·0817	·0983	·1150	·1317	·1483	·1650	·1817	·1983	·2150	·2317	·2483	·2650	·2817	·2983	·3150	·3317
55	·0153	·0319	·0486	·0653	·0819	·0986	·1153	·1319	·1486	·1653	·1819	·1986	·2153	·2319	·2486	·2653	·2819	·2986	·3153	·3319
56	·0155	·0322	·0489	·0655	·0822	·0989	·1155	·1322	·1489	·1655	·1822	·1989	·2155	·2322	·2489	·2655	·2822	·2989	·3155	·3322
57	·0158	·0325	·0492	·0658	·0825	·0992	·1158	·1325	·1492	·1658	·1825	·1992	·2158	·2325	·2492	·2658	·2825	·2992	·3158	·3325
58	·0161	·0328	·0494	·0661	·0828	·0994	·1161	·1328	·1494	·1661	·1828	·1994	·2161	·2328	·2494	·2661	·2828	·2994	·3161	·3328
59	·0164	·0330	·0497	·0664	·0830	·0997	·1164	·1330	·1497	·1664	·1830	·1997	·2164	·2330	·2497	·2664	·2830	·2997	·3164	·3330

TABLE XIX:—Ghatikas and Palas (Naligais and Vinadis) as Fractions of a day.—*contd.*

N.B.—The same table will serve for minutes and seconds as fractions of an **Hour** or a **Degree**.

Ghatikas.					Palas.	Ghatikas.					Palas.	Ghatikas.					Palas.	Ghatikas.				
20	**21**	**22**	**23**	**24**		**25**	**26**	**27**	**28**	**29**		**30**	**31**	**32**	**33**	**34**		**35**	**36**	**37**	**38**	**39**
·3333	·3500	·3667	·3833	·4000	**0**	·4167	·4333	·4500	·4667	·4833	**0**	·5000	·5167	·5333	·5500	·5667	**0**	·5833	·6000	·6167	·6333	·6500
·3336	·3503	·3669	·3836	·4003	**1**	·4169	·4336	·4503	·4669	·4836	**1**	·5003	·5169	·5336	·5503	·5669	**1**	·5836	·6003	·6169	·6336	·6503
·3339	·3505	·3672	·3839	·4005	**2**	·4172	·4339	·4505	·4672	·4839	**2**	·5005	·5172	·5339	·5505	·5672	**2**	·5839	·6005	·6172	·6339	·6505
·3342	·3508	·3675	·3842	·4008	**3**	·4175	·4342	·4508	·4675	·4842	**3**	·5008	·5175	·5342	·5508	·5675	**3**	·5842	·6008	·6175	·6342	·6508
·3344	·3511	·3678	·3844	·4011	**4**	·4178	·4344	·4511	·4678	·4844	**4**	·5011	·5178	·5344	·5511	·5678	**4**	·5844	·6011	·6178	·6344	·6511
·3347	·3514	·3680	·3847	·4014	**5**	·4180	·4347	·4514	·4680	·4847	**5**	·5014	·5180	·5347	·5514	·5680	**5**	·5847	·6014	·6180	·6347	·6514
·3350	·3517	·3683	·3850	·4017	**6**	·4183	·4350	·4517	·4683	·4850	**6**	·5017	·5183	·5350	·5517	·5683	**6**	·5850	·6017	·6183	·6350	·6517
·3353	·3519	·3686	·3853	·4019	**7**	·4186	·4353	·4519	·4686	·4853	**7**	·5019	·5186	·5353	·5519	·5686	**7**	·5853	·6019	·6186	·6353	·6519
·3355	·3522	·3689	·3855	·4022	**8**	·4189	·4355	·4522	·4689	·4855	**8**	·5022	·5189	·5355	·5522	·5689	**8**	·5855	·6022	·6189	·6355	·6522
·3358	·3525	·3692	·3858	·4025	**9**	·4192	·4358	·4525	·4692	·4858	**9**	·5025	·5192	·5358	·5525	·5692	**9**	·5858	·6025	·6192	·6358	·6525
·3361	·3528	·3694	·3861	·4028	**10**	·4194	·4361	·4528	·4694	·4861	**10**	·5028	·5194	·5361	·5528	·5694	**10**	·5861	·6028	·6194	·6361	·6528
·3364	·3530	·3697	·3864	·4030	**11**	·4197	·4364	·4530	·4697	·4864	**11**	·5030	·5197	·5364	·5530	·5697	**11**	·5864	·6030	·6197	·6364	·6530
·3367	·3533	·3700	·3867	·4033	**12**	·4200	·4367	·4533	·4700	·4867	**12**	·5033	·5200	·5367	·5533	·5700	**12**	·5867	·6033	·6200	·6367	·6533
·3369	·3536	·3703	·3869	·4036	**13**	·4203	·4369	·4536	·4703	·4869	**13**	·5036	·5203	·5369	·5536	·5703	**13**	·5869	·6036	·6203	·6369	·6536
·3372	·3539	·3705	·3872	·4039	**14**	·4205	·4372	·4539	·4705	·4872	**14**	·5039	·5205	·5372	·5539	·5705	**14**	·5872	·6039	·6205	·6372	·6539
·3375	·3542	·3708	·3875	·4042	**15**	·4208	·4375	·4542	·4708	·4875	**15**	·5042	·5208	·5375	·5542	·5708	**15**	·5875	·6042	·6208	·6375	·6542
·3378	·3544	·3711	·3878	·4044	**16**	·4211	·4378	·4544	·4711	·4878	**16**	·5044	·5211	·5378	·5544	·5711	**16**	·5878	·6044	·6211	·6378	·6544
·3380	·3547	·3714	·3880	·4047	**17**	·4214	·4380	·4547	·4714	·4880	**17**	·5047	·5214	·5380	·5547	·5714	**17**	·5880	·6047	·6214	·6380	·6547
·3383	·3550	·3717	·3883	·4050	**18**	·4217	·4383	·4550	·4717	·4883	**18**	·5050	·5217	·5383	·5550	·5717	**18**	·5883	·6050	·6217	·6383	·6550
·3386	·3553	·3719	·3886	·4053	**19**	·4219	·4386	·4553	·4719	·4886	**19**	·5053	·5219	·5386	·5553	·5719	**19**	·5886	·6053	·6219	·6386	·6553
·3389	·3555	·3722	·3889	·4055	**20**	·4222	·4389	·4555	·4722	·4889	**20**	·5055	·5222	·5389	·5555	·5722	**20**	·5889	·6055	·6222	·6389	·6555
·3392	·3558	·3725	·3892	·4058	**21**	·4225	·4392	·4558	·4725	·4892	**21**	·5058	·5225	·5392	·5558	·5725	**21**	·5892	·6058	·6225	·6392	·6558
·3394	·3561	·3728	·3894	·4061	**22**	·4228	·4394	·4561	·4728	·4894	**22**	·5061	·5228	·5394	·5561	·5728	**22**	·5894	·6061	·6228	·6394	·6561
·3397	·3564	·3730	·3897	·4064	**23**	·4230	·4397	·4564	·4730	·4897	**23**	·5064	·5230	·5397	·5564	·5730	**23**	·5897	·6064	·6230	·6397	·6564
·3400	·3567	·3733	·3900	·4067	**24**	·4233	·4400	·4567	·4733	·4900	**24**	·5067	·5233	·5400	·5567	·5733	**24**	·5900	·6067	·6233	·6400	·6567
·3403	·3569	·3736	·3903	·4069	**25**	·4236	·4403	·4569	·4736	·4903	**25**	·5069	·5236	·5403	·5569	·5736	**25**	·5903	·6069	·6236	·6403	·6569
·3405	·3572	·3739	·3905	·4072	**26**	·4239	·4405	·4572	·4739	·4905	**26**	·5072	·5239	·5405	·5572	·5739	**26**	·5905	·6072	·6239	·6405	·6572
·3408	·3575	·3742	·3908	·4075	**27**	·4242	·4408	·4575	·4742	·4908	**27**	·5075	·5242	·5408	·5575	·5742	**27**	·5908	·6075	·6242	·6408	·6575
·3411	·3578	·3744	·3911	·4078	**28**	·4244	·4411	·4578	·4744	·4911	**28**	·5078	·5244	·5411	·5578	·5744	**28**	·5911	·6078	·6244	·6411	·6578
·3414	·3580	·3747	·3914	·4080	**29**	·4247	·4414	·4580	·4747	·4914	**29**	·5080	·5247	·5414	·5580	·5747	**29**	·5914	·6080	·6247	·6414	·6580
·3417	·3583	·3750	·3917	·4083	**30**	·4250	·4417	·4583	·4750	·4917	**30**	·5083	·5250	·5417	·5583	·5750	**30**	·5917	·6083	·6250	·6417	·6583
·3419	·3586	·3753	·3919	·4086	**31**	·4253	·4419	·4586	·4753	·4919	**31**	·5086	·5253	·5419	·5586	·5753	**31**	·5919	·6086	·6253	·6419	·6586
·3422	·3589	·3755	·3922	·4089	**32**	·4255	·4422	·4589	·4755	·4922	**32**	·5089	·5255	·5422	·5589	·5755	**32**	·5922	·6089	·6255	·6422	·6589
·3425	·3592	·3758	·3925	·4092	**33**	·4258	·4425	·4592	·4758	·4925	**33**	·5092	·5258	·5425	·5592	·5758	**33**	·5925	·6092	·6258	·6425	·6592
·3428	·3594	·3761	·3928	·4094	**34**	·4261	·4428	·4594	·4761	·4928	**34**	·5094	·5261	·5428	·5594	·5761	**34**	·5928	·6094	·6261	·6428	·6594
·3430	·3597	·3764	·3930	·4097	**35**	·4264	·4431	·4597	·4764	·4930	**35**	·5097	·5264	·5431	·5597	·5764	**35**	·5930	·6097	·6264	·6431	·6597
·3433	·3600	·3767	·3933	·4100	**36**	·4267	·4433	·4600	·4767	·4933	**36**	·5100	·5267	·5433	·5600	·5767	**36**	·5933	·6100	·6267	·6433	·6600
·3436	·3603	·3769	·3936	·4103	**37**	·4269	·4436	·4603	·4769	·4936	**37**	·5103	·5269	·5436	·5603	·5769	**37**	·5936	·6103	·6269	·6436	·6603
·3439	·3605	·3772	·3939	·4105	**38**	·4272	·4439	·4605	·4772	·4939	**38**	·5105	·5272	·5439	·5605	·5772	**38**	·5939	·6105	·6272	·6439	·6605
·3442	·3608	·3775	·3942	·4108	**39**	·4275	·4442	·4608	·4775	·4942	**39**	·5108	·5275	·5442	·5608	·5775	**39**	·5942	·6108	·6275	·6442	·6608
·3444	·3611	·3778	·3944	·4111	**40**	·4278	·4444	·4611	·4778	·4944	**40**	·5111	·5278	·5444	·5611	·5778	**40**	·5944	·6111	·6278	·6444	·6611
·3447	·3614	·3780	·3947	·4114	**41**	·4280	·4447	·4614	·4780	·4947	**41**	·5114	·5280	·5447	·5614	·5780	**41**	·5947	·6114	·6280	·6447	·6614
·3450	·3617	·3783	·3950	·4117	**42**	·4283	·4450	·4617	·4783	·4950	**42**	·5117	·5283	·5450	·5617	·5783	**42**	·5950	·6117	·6283	·6450	·6617
·3453	·3619	·3786	·3953	·4119	**43**	·4286	·4453	·4619	·4786	·4953	**43**	·5119	·5286	·5453	·5619	·5786	**43**	·5953	·6119	·6286	·6453	·6620
·3455	·3622	·3789	·3955	·4122	**44**	·4289	·4455	·4622	·4789	·4955	**44**	·5122	·5289	·5455	·5622	·5789	**44**	·5955	·6122	·6289	·6455	·6622
·3458	·3625	·3792	·3958	·4125	**45**	·4292	·4458	·4625	·4792	·4958	**45**	·5125	·5292	·5458	·5625	·5792	**45**	·5958	·6125	·6292	·6458	·6625
·3461	·3628	·3794	·3961	·4128	**46**	·4294	·4461	·4628	·4794	·4961	**46**	·5128	·5294	·5461	·5628	·5794	**46**	·5961	·6128	·6294	·6461	·6628
·3464	·3630	·3797	·3964	·4130	**47**	·4297	·4464	·4630	·4797	·4964	**47**	·5130	·5297	·5464	·5630	·5797	**47**	·5964	·6130	·6297	·6464	·6630
·3467	·3633	·3800	·3967	·4133	**48**	·4300	·4467	·4633	·4800	·4967	**48**	·5133	·5300	·5467	·5633	·5800	**48**	·5967	·6133	·6300	·6467	·6633
·3469	·3636	·3803	·3969	·4136	**49**	·4303	·4469	·4636	·4803	·4969	**49**	·5136	·5303	·5469	·5636	·5803	**49**	·5969	·6136	·6303	·6469	·6636
·3472	·3639	·3805	·3972	·4139	**50**	·4305	·4472	·4639	·4805	·4972	**50**	·5139	·5305	·5472	·5639	·5805	**50**	·5972	·6139	·6305	·6472	·6639
·3475	·3642	·3808	·3975	·4142	**51**	·4308	·4475	·4642	·4808	·4975	**51**	·5142	·5308	·5475	·5642	·5808	**51**	·5975	·6142	·6308	·6475	·6642
·3478	·3644	·3811	·3978	·4144	**52**	·4311	·4478	·4644	·4811	·4978	**52**	·5144	·5311	·5478	·5644	·5811	**52**	·5978	·6144	·6311	·6478	·6644
·3480	·3647	·3814	·3980	·4147	**53**	·4314	·4480	·4647	·4814	·4980	**53**	·5147	·5314	·5480	·5647	·5814	**53**	·5980	·6147	·6314	·6480	·6647
·3483	·3650	·3817	·3983	·4150	**54**	·4317	·4483	·4650	·4817	·4983	**54**	·5150	·5317	·5483	·5650	·5817	**54**	·5983	·6150	·6317	·6483	·6650
·3486	·3653	·3819	·3986	·4153	**55**	·4319	·4486	·4653	·4819	·4986	**55**	·5153	·5319	·5486	·5653	·5819	**55**	·5986	·6153	·6319	·6486	·6653
·3489	·3655	·3822	·3989	·4155	**56**	·4322	·4489	·4655	·4822	·4989	**56**	·5155	·5322	·5489	·5655	·5822	**56**	·5989	·6155	·6322	·6489	·6655
·3492	·3658	·3825	·3992	·4158	**57**	·4325	·4492	·4658	·4825	·4992	**57**	·5158	·5325	·5492	·5658	·5825	**57**	·5992	·6158	·6325	·6492	·6658
·3494	·3661	·3828	·3994	·4161	**58**	·4328	·4494	·4661	·4828	·4994	**58**	·5161	·5328	·5494	·5661	·5828	**58**	·5994	·6161	·6328	·6494	·6661
·3497	·3664	·3830	·3997	·4164	**59**	·4330	·4497	·4664	·4830	·4997	**59**	·5164	·5330	·5497	·5664	·5830	**59**	·5997	·6164	·6330	·6497	·6664

TABLE XIX:—Ghatikas and Palas (Naligais and Vinadis) as Fractions of a day.—*contd.*

N.B.—The same table will serve for minutes and seconds as fractions of an **Hour** or a **Degree**.

Palas.	Ghatikas.																			
	40	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**
0	·6667	·6833	·7000	·7167	·7333	·7500	·7667	·7833	·8000	·8167	·8333	·8500	·8667	·8833	·9000	·9167	·9333	·9500	·9667	·9833
1	·6669	·6836	·7003	·7169	·7336	·7503	·7669	·7836	·8003	·8169	·8336	·8503	·8669	·8836	·9003	·9169	·9336	·9503	·9669	·9836
2	·6672	·6839	·7006	·7172	·7339	·7505	·7672	·7839	·8005	·8172	·8339	·8505	·8672	·8839	·9005	·9172	·9339	·9505	·9672	·9839
3	·6675	·6842	·7008	·7175	·7342	·7508	·7675	·7842	·8008	·8175	·8342	·8508	·8675	·8842	·9008	·9175	·9342	·9508	·9675	·9842
4	·6678	·6844	·7011	·7178	·7344	·7511	·7678	·7844	·8011	·8178	·8344	·8511	·8678	·8844	·9011	·9178	·9344	·9511	·9678	·9844
5	·6680	·6847	·7014	·7180	·7347	·7514	·7680	·7847	·8014	·8180	·8347	·8514	·8680	·8847	·9014	·9180	·9347	·9514	·9680	·9847
6	·6683	·6850	·7017	·7183	·7350	·7517	·7683	·7850	·8017	·8183	·8350	·8517	·8683	·8850	·9017	·9183	·9350	·9517	·9683	·9850
7	·6686	·6853	·7019	·7186	·7353	·7519	·7686	·7853	·8019	·8186	·8353	·8519	·8686	·8853	·9019	·9186	·9353	·9519	·9686	·9853
8	·6689	·6855	·7022	·7189	·7355	·7522	·7689	·7855	·8022	·8189	·8355	·8522	·8689	·8855	·9022	·9189	·9355	·9522	·9689	·9855
9	·6692	·6858	·7025	·7192	·7358	·7525	·7692	·7858	·8025	·8192	·8358	·8525	·8692	·8858	·9025	·9192	·9358	·9525	·9692	·9858
10	·6694	·6861	·7028	·7194	·7361	·7528	·7694	·7861	·8028	·8194	·8361	·8528	·8694	·8861	·9028	·9194	·9361	·9528	·9694	·9861
11	·6697	·6864	·7030	·7197	·7364	·7530	·7697	·7864	·8030	·8197	·8364	·8530	·8697	·8864	·9030	·9197	·9364	·9530	·9697	·9864
12	·6700	·6867	·7033	·7200	·7367	·7533	·7700	·7867	·8033	·8200	·8367	·8533	·8700	·8867	·9033	·9200	·9367	·9533	·9700	·9867
13	·6703	·6869	·7036	·7203	·7369	·7536	·7703	·7869	·8036	·8203	·8369	·8536	·8703	·8869	·9036	·9203	·9369	·9536	·9703	·9869
14	·6705	·6872	·7039	·7205	·7372	·7539	·7705	·7872	·8039	·8205	·8372	·8539	·8705	·8872	·9039	·9205	·9372	·9539	·9705	·9872
15	·6708	·6875	·7042	·7208	·7375	·7542	·7708	·7875	·8042	·8208	·8375	·8542	·8708	·8875	·9042	·9208	·9375	·9542	·9708	·9875
16	·6711	·6878	·7044	·7211	·7378	·7544	·7711	·7878	·8044	·8211	·8378	·8544	·8711	·8878	·9044	·9211	·9378	·9544	·9711	·9878
17	·6714	·6880	·7047	·7214	·7380	·7547	·7714	·7880	·8047	·8214	·8380	·8547	·8714	·8880	·9047	·9214	·9380	·9547	·9714	·9880
18	·6717	·6883	·7050	·7217	·7383	·7550	·7717	·7883	·8050	·8217	·8383	·8550	·8717	·8883	·9050	·9217	·9383	·9550	·9717	·9883
19	·6719	·6886	·7053	·7219	·7386	·7553	·7719	·7886	·8053	·8219	·8386	·8553	·8719	·8886	·9053	·9219	·9386	·9553	·9719	·9886
20	·6722	·6889	·7055	·7222	·7389	·7555	·7722	·7889	·8055	·8222	·8389	·8555	·8722	·8889	·9055	·9222	·9389	·9555	·9722	·9889
21	·6725	·6892	·7058	·7225	·7392	·7558	·7725	·7892	·8058	·8225	·8392	·8558	·8725	·8892	·9058	·9225	·9392	·9558	·9725	·9892
22	·6728	·6894	·7061	·7228	·7394	·7561	·7728	·7894	·8061	·8228	·8394	·8561	·8728	·8894	·9061	·9228	·9394	·9561	·9728	·9894
23	·6730	·6897	·7064	·7230	·7397	·7564	·7730	·7897	·8064	·8230	·8397	·8564	·8730	·8897	·9064	·9230	·9397	·9564	·9730	·9897
24	·6733	·6900	·7067	·7233	·7400	·7567	·7733	·7900	·8067	·8233	·8400	·8567	·8733	·8900	·9067	·9233	·9400	·9567	·9733	·9900
25	·6736	·6903	·7069	·7236	·7403	·7569	·7736	·7903	·8069	·8236	·8403	·8569	8736	·8903	·9069	·9236	·9403	·9569	·9736	·9903
26	·6739	·6905	·7072	·7239	·7405	·7572	·7739	·7905	·8072	·8239	·8405	·8572	·8739	·8905	·9072	·9239	·9405	·9572	·9739	·9905
27	·6742	·6908	·7075	·7242	·7408	·7575	·7742	·7908	·8075	·8242	·8408	·8575	·8742	·8908	·9075	·9242	·9408	·9575	·9742	·9908
28	·6744	·6911	·7078	·7244	·7411	·7578	·7744	·7911	·8078	·8244	·8411	·8578	·8744	·8911	·9078	·9244	·9411	·9578	·9744	·9911
29	·6747	·6914	·7080	·7247	·7414	·7580	·7747	·7914	·8080	·8247	·8414	·8580	·8747	·8914	·9080	·9247	·9414	·9580	·9747	·9914
30	·6750	·6917	·7083	·7250	·7417	·7583	·7750	·7917	·8083	·8250	·8417	·8583	·8750	·8917	·9083	·9250	·9417	·9583	·9750	·9917
31	·6753	·6919	·7086	·7253	·7419	·7586	·7753	·7919	·8086	·8253	·8419	·8586	·8753	·8919	·9086	·9253	·9419	·9586	·9753	·9919
32	·6755	·6922	·7089	·7255	·7422	·7589	·7755	·7922	·8089	·8255	·8422	·8589	·8755	·8922	·9089	·9255	·9422	·9589	·9755	·9922
33	·6758	·6925	·7092	·7258	·7425	·7592	·7758	·7925	·8092	·8258	·8425	·8592	·8758	·8925	·9092	·9258	·9425	·9592	·9758	·9925
34	·6761	·6928	·7094	·7261	·7428	·7594	·7761	·7928	·8094	·8261	·8428	·8594	·8761	·8928	·9094	·9261	·9428	·9594	·9761	·9928
35	·6764	·6930	·7097	·7264	·7430	·7597	·7764	·7930	·8097	·8264	·8430	·8597	·8764	·8930	·9097	·9264	·9430	·9597	·9764	·9930
36	·6767	·6933	·7100	·7267	·7433	·7600	·7767	·7933	·8100	·8267	·8433	·8600	·8767	·8933	·9100	·9267	·9433	·9600	·9767	·9933
37	·6769	·6936	·7103	·7269	·7436	·7603	·7769	·7936	·8103	·8269	·8436	·8603	·8769	·8936	·9103	·9269	·9436	·9603	·9769	·9936
38	·6772	·6939	·7105	·7272	·7439	·7605	·7772	·7939	·8105	·8272	·8439	·8605	·8772	·8939	·9105	·9272	·9439	·9605	·9772	·9939
39	·6775	·6942	·7108	·7275	·7442	·7608	·7775	·7942	·8108	·8275	·8442	·8608	·8775	·8942	·9108	·9275	·9442	·9608	·9775	·9942
40	·6778	·6944	·7111	·7278	·7444	·7611	·7778	·7944	·8111	·8278	·8444	·8611	·8778	·8944	·9111	·9278	·9444	·9611	·9778	·9944
41	·6780	·6947	·7114	·7280	·7447	·7614	·7780	·7947	·8114	·8280	·8447	·8614	·8780	·8947	·9114	·9280	·9447	·9614	·9780	·9947
42	·6783	·6950	·7117	·7283	·7450	·7617	·7783	·7950	·8117	·8283	·8450	·8617	·8783	·8950	·9117	·9283	·9450	·9617	·9783	·9950
43	·6786	·6953	·7119	·7286	·7453	·7619	·7786	·7953	·8119	·8286	·8453	·8619	·8786	·8953	·9119	·9286	·9453	·9619	·9786	·9953
44	·6789	·6955	·7122	·7289	·7455	·7622	·7789	·7955	·8122	·8289	·8455	·8622	·8789	·8955	·9122	·9289	·9455	·9622	·9789	·9955
45	·6792	·6958	·7125	·7292	·7458	·7625	·7792	·7958	·8125	·8292	·8458	·8625	·8792	·8958	·9125	·9292	·9458	·9625	·9792	·9958
46	·6794	·6961	·7128	·7294	·7461	·7628	·7794	·7961	·8128	·8294	·8461	·8628	·8794	·8961	·9128	·9294	·9461	·9628	·9794	·9961
47	·6797	·6964	·7130	·7297	·7464	·7630	·7797	·7964	·8130	·8297	·8464	·8630	·8797	·8964	·9130	·9297	·9464	·9630	·9797	·9964
48	·6800	·6967	·7133	·7300	·7467	·7633	·7800	·7967	·8133	·8300	·8467	·8633	·8800	·8967	·9133	·9300	·9467	·9633	·9800	·9967
49	·6803	·6969	·7136	·7303	·7469	·7636	·7803	·7969	·8136	·8303	·8469	·8636	·8803	·8969	·9136	·9303	·9469	·9636	·9803	·9969
50	·6805	·6972	·7139	·7305	·7472	·7639	·7805	·7972	·8139	·8305	·8472	·8639	·8805	·8972	·9139	·9305	·9472	·9639	·9805	·9972
51	·6808	·6975	·7142	·7308	·7475	·7642	·7808	·7975	·8142	·8308	·8475	·8642	·8808	·8975	·9142	·9308	·9475	·9642	·9808	·9975
52	·6811	·6978	·7144	·7311	·7478	·7644	·7811	·7978	·8144	·8311	·8478	·8644	·8811	·8978	·9144	·9311	·9478	·9644	·9811	·9978
53	·6814	·6980	·7147	·7314	·7480	·7647	·7814	·7980	·8147	·8314	·8480	·8647	·8814	·8980	·9147	·9314	·9480	·9647	·9814	·9980
54	·6817	·6983	·7150	·7317	·7483	·7650	·7817	·7983	·8150	·8317	·8483	·8650	·8817	·8983	·9150	·9317	·9483	·9650	·9817	·9983
55	·6819	·6986	·7153	·7319	·7486	·7653	·7819	·7986	·8153	·8319	·8486	·8653	·8819	·8986	·9153	·9319	·9486	·9653	·9819	·9986
56	·6822	·6989	·7155	·7322	·7489	·7655	·7822	·7989	·8155	·8322	·8489	·8655	·8822	·8989	·9155	·9322	·9489	·9655	·9822	·9989
57	·6825	·6992	·7158	·7325	·7492	·7658	·7825	·7992	·8158	·8325	·8492	·8658	·8825	·8992	·9158	·9325	·9492	·9658	·9825	·9992
58	·6828	·6994	·7161	·7328	·7494	·7661	·7828	·7994	·8161	·8328	·8494	·8661	·8828	·8994	·9161	·9328	·9494	·9661	·9828	·9994
59	·6830	·6997	·7164	·7330	·7497	·7664	·7830	·7997	·8164	·8330	·8497	·8664	·8830	·8997	·9163	·9330	·9497	·9664	·9830	·9997

TABLE XX:—Hours and Minutes as Fractions of a Day.

Minutes.	Hours. 0	1	2	3	4	5	6	7	8	9	10	11	Seconds of hours as fractions of a day.
0	...	·0416666	·0833333	·1250000	·1666666	·2083333	·2500000	·2916666	·3333333	·3750000	·4166666	·4583333	...
1	·0006944	·0423611	·0840277	·1256944	·1673611	·2090277	·2506944	·2923611	·3340277	·3756944	·4173611	·4590277	·00001
2	·0013888	·0430555	·0847222	1263888	·1680555	·2097222	·2513888	·2930555	·3347222	·3763888	·4180555	·4597222	·00002
3	·0020833	·0437500	·0854166	·1270833	·1687500	·2104166	·2520833	·2937500	·3354166	·3770833	·4187500	·4604166	·00003
4	·0027777	·0444444	·0861111	·1277777	·1694444	·2111111	·2527777	·2944444	·3361111	·3777777	·4194444	·4611111	·00005
5	·0034722	·0451388	·0868055	·1284722	·1701388	·2118055	·2534722	·2951388	·3368055	·3784722	·4201388	·4618055	·00006
6	·0041666	·0458333	·0875000	·1291666	·1708333	·2125000	·2541666	·2958333	·3375000	·3791666	·4208333	·4625000	·00007
7	·0048611	·0465277	·0881944	·1298611	·1715277	·2131944	·2548611	·2965277	·3381944	·3798611	·4215277	·4631944	·00008
8	·0055555	·0472222	·0888888	·1305555	·1722222	·2138888	·2555555	·2972222	·3388888	·3805555	·4222222	·4638888	·00009
9	·0062500	·0479166	·0895833	·1312500	·1729166	·2145833	·2562500	·2979166	·3395833	·3812500	·4229166	·4645833	·00010
10	·0069444	·0486111	·0902777	·1319444	·1736111	·2152777	·2569444	·2986111	·3402777	·3819444	·4236111	·4652777	·00012
11	·0076388	·0493055	·0909722	·1326388	·1743055	·2159722	·2576388	·2993055	·3409722	·3826388	·4243055	·4659722	·00013
12	·0083333	·0500000	·0916666	·1333333	·1750000	·2166666	·2583333	·3000000	·3416666	·3833333	·4250000	·4666666	·00014
13	·0090277	·0506944	·0923611	·1340277	·1756944	·2173611	·2590277	·3006944	·3423611	·3840277	·4256944	·4673611	·00015
14	·0097222	·0513888	·0930555	·1347222	·1763888	·2180555	·2597222	·3013888	·3430555	·3847222	·4263888	·4680555	·00016
15	·0104166	·0520833	·0937500	·1354166	·1770833	·2187500	·2604166	·3020833	·3437500	·3854166	·4270833	·4687500	·00017
16	·0111111	·0527777	·0944444	·1361111	·1777777	·2194444	·2611111	·3027777	·3444444	·3861111	·4277777	·4694444	·00018
17	·0118055	·0534722	·0951388	·1368055	·1784722	·2201388	·2618055	·3034722	·3451388	·3868055	·4284722	·4701388	·00020
18	·0125000	·0541666	·0958333	·1375000	·1791666	·2208333	·2625000	·3041666	·3458333	·3875000	·4291666	·4708333	·00021
19	·0131944	·0548611	·0965277	·1381944	·1798611	·2215277	·2631944	·3048611	·3465277	·3881944	·4298611	·4715277	·00022
20	·0138888	·0555555	·0972222	·1388888	·1805555	·2222222	·2638888	·3055555	·3472222	·3888888	·4305555	·4722222	·00023
21	·0145833	·0562500	·0979166	·1395833	·1812500	·2229166	·2645833	·3062500	·3479166	·3895833	·4312500	·4729166	·00024
22	·0152777	·0569444	·0986111	·1402777	·1819444	·2236111	·2652777	·3069444	·3486111	·3902777	·4319444	·4736111	·00025
23	·0159722	·0576388	·0993055	·1409722	·1826388	·2243055	·2659722	·3076388	·3493055	·3909722	·4326388	·4743055	·00027
24	·0166666	·0583333	·1000000	·1416666	·1833333	·2250000	·2666666	·3083333	·3500000	·3916666	·4333333	·4750000	·00028
25	·0173611	·0590277	·1006944	·1423611	·1840277	·2256944	·2673611	·3090277	·3506944	·3923611	·4340277	·4756944	·00029
26	·0180555	·0597222	·1013888	·1430555	·1847222	·2263888	·2680555	·3097222	·3513888	·3930555	·4347222	·4763888	·00030
27	·0187500	·0604166	·1020833	·1437500	·1854166	·2270833	·2687500	·3104166	·3520833	·3937500	·4354166	·4770833	·00031
28	·0194444	·0611111	·1027777	·1444444	·1861111	·2277777	·2694444	·3111111	·3527777	·3944444	·4361111	·4777777	·00032
29	·0201388	·0618055	·1034722	·1451388	·1868055	·2284722	·2701388	·3118055	·3534722	·3951388	·4368055	·4784722	·00034
30	·0208333	·0625000	·1041666	·1458333	·1875000	·2291666	·2708333	·3125000	·3541666	·3958333	·4375000	·4791666	·00035
31	·0215277	·0631944	·1048611	·1465277	·1881944	·2298611	·2715277	·3131944	·3548611	·3965277	·4381944	·4798611	·00036
32	·0222222	·0638888	·1055555	·1472222	·1888888	·2305555	·2722222	·3138888	·3555555	·3972222	·4388888	·4805555	·00037
33	·0229166	·0645833	·1062500	·1479166	·1895833	·2312500	·2729166	·3145833	·3562500	·3979166	·4395833	·4812500	·00038
34	·0236111	·0652777	·1069444	·1486111	·1902777	·2319444	·2736111	·3152777	·3569444	·3986111	·4402777	·4819444	·00039
35	·0243055	·0659722	·1076388	·1493055	·1909722	·2326388	·2743055	·3159722	·3576388	·3993055	·4409722	·4826388	·00040
36	·0250000	·0666666	·1083333	·1500000	·1916666	·2333333	·2750000	·3166666	·3583333	·4000000	·4416666	·4833333	·00042
37	·0256944	·0673611	·1090277	·1506944	·1923611	·2340277	·2756944	·3173611	·3590277	·4006944	·4423611	·4840277	·00043
38	·0263888	·0680555	·1097222	·1513888	·1930555	·2347222	·2763888	·3180555	·3597222	·4013888	·4430555	·4847222	·00044
39	·0270833	·0687500	·1104166	·1520833	·1937500	·2354166	·2770833	·3187500	·3604166	·4020833	·4437500	·4854166	·00045
40	·0277777	·0694444	·1111111	·1527777	·1944444	·2361111	·2777777	·3194444	·3611111	·4027777	·4444444	·4861111	·00046
41	·0284722	·0701388	·1118055	·1534722	·1951388	·2368055	·2784722	·3201388	·3618055	·4034722	·4451388	·4868055	·00047
42	·0291666	·0708333	·1125000	·1541666	·1958333	·2375000	·2791666	·3208333	·3625000	·4041666	·4458333	·4875000	·00049
43	·0298611	·0715277	·1131944	·1548611	·1965277	·2381944	·2798611	·3215277	·3631944	·4048611	·4465277	·4881944	·00050
44	·0305555	·0722222	·1138888	·1555555	·1972222	·2388888	·2805555	·3222222	·3638888	·4055555	·4472222	·4888888	·00051
45	·0312500	·0729166	·1145833	·1562500	·1979166	·2395833	·2812500	·3229166	·3645833	·4062500	·4479166	·4895833	·00052
46	·0319444	·0736111	·1152777	·1569444	·1986111	·2402777	·2819444	·3236111	·3652777	·4069444	·4486111	·4902777	·00053
47	·0326388	·0743055	·1159722	·1576388	·1993055	·2409722	·2826388	·3243055	·3659722	·4076388	·4493055	·4909722	·00054
48	·0333333	·0750000	·1166666	·1583333	·2000000	·2416666	·2833333	·3250000	·3666666	·4083333	·4500000	·4916666	·00055
49	·0340277	·0756944	·1173611	·1590277	·2006944	·2423611	·2840277	·3256944	·3673611	·4090277	·4506944	·4923611	·00057
50	·0347222	·0763888	·1180555	·1597222	·2013888	·2430555	·2847222	·3263888	·3680555	·4097222	·4513888	·4930555	·00058
51	·0354166	·0770833	·1187500	·1604166	·2020833	·2437500	·2854166	·3270833	·3687500	·4104166	·4520833	·4937500	·00059
52	·0361111	·0777777	·1194444	·1611111	·2027777	·2444444	·2861111	·3277777	·3694444	·4111111	·4527777	·4944444	·00060
53	·0368055	·0784722	·1201388	·1618055	·2034722	·2451388	·2868055	·3284722	·3701388	·4118055	·4534722	·4951388	·00061
54	·0375000	·0791666	·1208333	·1625000	·2041666	·2458333	·2875000	·3291666	·3708333	·4125000	·4541666	·4958333	·00062
55	·0381944	·0798611	·1215277	·1631944	·2048611	·2465277	·2881944	·3298611	·3715277	·4131944	·4548611	·4965277	·00064
56	·0388888	·0805555	·1222222	·1638888	·2055555	·2472222	·2888888	·3305555	·3722222	·4138888	·4555555	·4972222	·00065
57	·0395833	·0812500	·1229166	·1645833	·2062500	·2479166	·2895833	·3312500	·3729166	·4145833	·4562500	·4979166	·00066
58	·0402777	·0819444	·1236111	·1652777	·2069444	·2486111	·2202777	·3319444	·3736111	·4152777	·4569444	·4986111	·00067
59	·0409722	·0826388	·1243055	·1659722	·2076388	·2493055	·2909722	·3326388	·3743055	·4159722	·4576388	·4993055	·00068

TABLE XX:— Hours and Minutes as Fractions of a Day—*contd.*

Minutes.	Hours. 12	13	14	15	Minutes.	Hours. 16	17	18	19	Minutes.	Hours. 20	21	22	23	Minutes.	Seconds of hours as fractions of a day.
0	·5000000	·5416666	·5833333	·6250000	0	·6666666	·7083333	·7500000	·7916666	0	·8333333	·8750000	·9166666	·9583333	0	...
1	·5006944	·5423611	·5840277	·6256944	1	·6673611	·7090277	·7506944	·7923611	1	·8340277	·8756944	·9173611	·9590277	1	·00001
2	·5013888	·5430555	·5847222	·6263888	2	·6680555	·7097222	·7513888	·7930555	2	·8347222	·8763888	·9180555	·9597222	2	·00002
3	·5020833	·5437500	·5854166	·6270833	3	·6687500	·7104166	·7520833	·7937500	3	·8354166	·8770833	·9187500	·9604166	3	·00003
4	·5027777	·5444444	·5861111	·6277777	4	·6694444	·7111111	·7527777	·7944444	4	·8361111	·8777777	·9194444	·9611111	4	·00005
5	·5034722	·5451388	·5868055	·6284722	5	·6701388	·7118055	·7534722	·7951388	5	·8368055	·8784722	·9201388	·9618055	5	·00006
6	·5041666	·5458333	·5875000	·6291666	6	·6708333	·7125000	·7541666	·7958333	6	·8375000	·8791666	·9208333	·9625000	6	·00007
7	·5048611	·5465277	·5881944	·6298611	7	·6715277	·7131944	·7548611	·7965277	7	·8381944	·8798611	·9215277	·9631944	7	·00008
8	·5055555	·5472222	·5888888	·6305555	8	·6722222	·7138888	·7555555	·7972222	8	·8388888	·8805555	·9222222	·9638888	8	·00009
9	·5062500	·5479166	·5895833	·6312500	9	·6729166	·7145833	·7562500	·7979166	9	·8395833	·8812500	·9229166	·9645833	9	·00010
10	·5069444	·5486111	·5902777	·6319444	10	·6736111	·7152777	·7569444	·7986111	10	·8402777	·8819444	·9236111	·9652777	10	·00012
11	·5076388	·5493055	·5909722	·6326388	11	·6743055	·7159722	·7576388	·7993055	11	·8409722	·8826388	·9243055	·9659722	11	·00013
12	·5083333	·5500000	·5916666	·6333333	12	·6750000	·7166666	·7583333	·8000000	12	·8416666	·8833333	·9250000	·9666666	12	·00014
13	·5090277	·5506944	·5923611	·6340277	13	·6756944	·7173611	·7590277	·8006944	13	·8423611	·8840277	·9256944	·9673611	13	·00015
14	·5097222	·5513888	·5930555	·6347222	14	·6763888	·7180555	·7597222	·8013888	14	·8430555	·8847222	·9263888	·9680555	14	·00016
15	·5104166	·5520833	·5937500	·6354166	15	·6770833	·7187500	·7604166	·8020833	15	·8437500	·8854166	·9270833	·9687500	15	·00017
16	·5111111	·5527777	·5944444	·6361111	16	·6777777	·7194444	·7611111	·8027777	16	·8444444	·8861111	·9277777	·9694444	16	·00018
17	·5118055	·5534722	·5951388	·6368055	17	·6784722	·7201388	·7618055	·8034722	17	·8451388	·8868055	·9284722	·9701388	17	·00020
18	·5125000	·5541666	·5958333	·6375000	18	·6791666	·7208333	·7625000	·8041666	18	·8458333	·8875000	·9291666	·9708333	18	·0002[illegible]
19	·5131944	·5548611	·5965277	·6381944	19	·6798611	·7215277	·7631944	·8048611	19	·8465277	·8881944	·9298611	·9715277	19	·00022
20	·5138888	·5555555	·5972222	·6388888	20	·6805555	·7222222	·7638888	·8055555	20	·8472222	·8888888	·9305555	·9722222	20	·00023
21	·5145833	·5562500	·5979166	·6395833	21	·6812500	·7229166	·7645833	·8062500	21	·8479166	·8895833	·9312500	·9729166	21	·00024
22	·5152777	·5569444	·5986111	·6402777	22	·6819444	·7236111	·7652777	·8069444	22	·8486111	·8902777	·9319444	·9736111	22	·00025
23	·5159722	·5576388	·5993055	·6409722	23	·6826388	·7243055	·7659722	·8076388	23	·8493055	·8909722	·9326388	·9743055	23	·0002[illegible]
24	·5166666	·5583333	·6000000	·6416666	24	·6833333	·7250000	·7666666	·8083333	24	·8500000	·8916666	·9333333	·9750000	24	·00028
25	·5173611	·5590277	·6006944	·6423611	25	·6840277	·7256944	·7673611	·8090277	25	·8506944	·8923611	·9340277	·9756944	25	·00029
26	·5180555	·5597222	·6013888	·6430555	26	·6847222	·7263888	·7680555	·8097222	26	·8513888	·8930555	·9347222	·9763888	26	·00030
27	·5187500	·5604166	·6020833	·6437500	27	·6854166	·7270833	·7687500	·8104166	27	·8520833	·8937500	·9354166	·9770833	27	·00031
28	·5194444	·5611111	·6027777	·6444444	28	·6861111	·7277777	·7694444	·8111111	28	·8527777	·8944444	·9361111	·9777777	28	·00032
29	·5201388	·5618055	·6034722	·6451388	29	·6868055	·7284722	·7701388	·8118055	29	·8534722	·8951388	·9368055	·9784722	29	·00034
30	·5208333	·5625000	·6041666	·6458333	30	·6875000	.7291666	·7708333	·8125000	30	·8541666	·8958333	·9375000	·9791666	30	·00035
31	·5215277	·5631944	·6048611	·6465277	31	·6881944	·7298611	·7715277	·8131944	31	·8548611	·8965277	·9381944	·9798611	31	·00036
32	·5222222	·5638888	·6055555	·6472222	32	·6888888	·7305555	·7722222	·8138888	32	·8555555	·8972222	·9388888	·9805555	32	·00037
33	·5229166	·5645833	·6062500	·6479166	33	·6895833	·7312500	·7729166	·8145833	33	·8562500	·8979166	·9395833	·9812500	33	·00038
34	·5236111	·5652777	·6069444	·6486111	34	·6902777	·7319444	·7736111	·8152777	34	·8569444	·8986111	·9402777	·9819444	34	·00039
35	·5243055	·5659722	·6076388	·6493055	35	·6909722	·7326388	·7743055	·8159722	35	·8576388	·8993055	·9409722	·9826388	35	·00040
36	·5250000	·5666666	·6083333	·6500000	36	·6916666	·7333333	·7750000	·8166666	36	·8583333	·9000000	·9416666	·9833333	36	·00042
37	·5256944	·5673611	·6090277	·6506944	37	·6923611	·7340277	.7756945	·8173611	37	·8590277	·9006944	·9423611	·9840277	37	·00043
38	·5263888	·5680555	·6097222	·6513888	38	·6930555	·7347222	·7763888	·8180555	38	·8597222	·9013888	·9430555	·9847222	38	·00044
39	·5270833	·5687500	·6104166	·6520833	39	·6937500	·7354166	·7770833	·8187500	39	·8604166	·9020833	·9437500	·9854166	39	·00045
40	·5277777	·5694444	·6111111	·6527777	40	·6944444	·7361111	·7777777	·8194444	40	·8611111	·9027777	·9444444	·9861111	40	·00046
41	·5284722	·5701388	·6118055	·6534722	41	·6951388	·7368055	.7784722	·8201388	41	·8618055	·9034722	·9451388	9868055	41	·00047
42	·5291666	·5708333	·6125000	·6541666	42	·6958333	·7375000	·7791666	·8208333	42	·8625000	·9041666	·9458333	·9875000	42	·00049
43	·5298611	·5715277	·6131944	·6548611	43	·6965277	·7381944	·7798611	·8215277	43	·8631944	·9048611	·9465277	·9881944	43	·00050
44	·5305555	·5722222	·6138888	·6555555	44	·6972222	·7388888	·7805555	·8222222	44	·8638888	·9055555	·9472222	·9888888	44	·00051
45	·5312500	·5729166	·6145833	·6562500	45	·6979166	·7395833	·7812500	·8229166	45	·8645833	·9062500	·9479166	·9895833	45	·00052
46	·5319444	·5736111	·6152777	·6569444	46	·6986111	·7402777	·7819444	·8236111	46	·8652777	·9069444	·9486111	·9902777	46	·00053
47	·5326388	·5743055	·6159722	·6576388	47	·6993055	·7409722	·7826388	·8243055	47	·8659722	·9076388	·9493055	·9909722	47	·00054
48	·5333333	·5750000	·6166666	·6583333	48	·7000000	·7416666	·7833333	·8250000	48	·8666666	·9083333	·9500000	·9916666	48	·0005[illegible]
49	·5340277	·5756944	·6173611	·6590277	49	·7006944	·7423611	·7840277	·8256944	49	·8673611	·9090277	·9506944	·9923611	49	·0005[illegible]
50	·5347222	·5763888	·6180555	·6597222	50	·7013888	·7430555	·7847222	·8263888	50	·8680555	·9097222	·9513888	·9930555	50	·0005[illegible]
51	·5354166	·5770833	·6187500	·6604166	51	·7020833	·7437500	·7854166	·8270833	51	·8687500	·9104166	·9520833	·9937500	51	·0005[illegible]
52	·5361111	·5777777	·6194444	·6611111	52	·7027777	·7444444	·7861111	·8277777	52	·8694444	·9111111	·9527777	·9944444	52	·0006[illegible]
53	·5368055	·5784722	·6201388	·6618055	53	·7034722	·7451388	·7868055	·8284722	53	·8701388	·9118055	·9534722	·9951388	53	·000[illegible]
54	·5375000	·5791666	·6208333	·6625000	54	·7041666	·7458333	·7875000	·8291666	54	·8708333	·9125000	·9541666	·9958333	54	·0006[illegible]
55	·5381944	·5798611	·6215277	·6631944	55	·7048611	·7465277	·7881944	·8298611	55	·8715277	·9131944	·9548611	·9965277	55	·0006[illegible]
56	·5388888	·5805555	·6222222	·6638888	56	·7055555	·7472222	·7888888	·8305555	56	·8722222	·9138888	·9555555	·9972222	56	·0006[illegible]
57	·5395833	·5812500	·6229166	·6645833	57	·7062500	·7479166	·7895833	·8312500	57	·8729166	·9145833	·9562500	·9979166	57	·0006[illegible]
58	·5402777	·5819444	·6236111	·6652777	58	·7069444	·7486111	·7902777	·8319444	58	·8736111	·9152777	·9569444	·9986111	58	·0006[illegible]
59	·5409722	·5826388	·6243055	·6659722	59	·7076388	·7493055	·7909722	·8326388	59	·8743055	·9159722	·9576388	·9993055	59	·0006[illegible]

TABLE XXI.—Navamsas.

Nav.	Long.	Nav. Sign.	Nav.	Long.	Nav. Sign.	Nav.	Long.	Nav. Sign.	Nav.	Long.	Nav. Sign.	Nav.	Long.	Nav. Sign.	Nav.	Long.	Nav. Sign.
1	3·3	I	1	63·3	VII	1	123·3	I	1	183·3	VII	1	243·3	I	1	303·3	VII
2	6·6	II	2	66·6	VIII	2	126·6	II	2	186·6	VIII	2	246·6	II	2	306·6	VIII
3	10·0	III	3	70·0	IX	3	130·0	III	3	190·0	IX	3	250·0	III	3	310·0	IX
4	13·3	IV	4	73·3	X	4	133·3	IV	4	193·3	X	4	253·3	IV	4	313·3	X
5	16·6	V	5	76·6	XI	5	136·6	V	5	196·6	XI	5	256·6	V	5	316·6	XI
6	20·0	VI	6	80·0	XII	6	140·0	VI	6	200·0	XII	6	260·0	VI	6	320·0	XII
7	23·3	VII	7	83·3	I	7	143·3	VII	7	203·3	I	7	263·3	VII	7	323·3	I
8	26·6	VIII	8	86·6	II	8	146·6	VIII	8	206·6	II	8	266·6	VIII	8	326·6	II
9	30·0	IX	9	90·0	III	9	150·0	IX	9	210·0	III	9	270·0	IX	9	330·0	III
1	33·3	X	1	93·3	IV	1	153·3	X	1	213·3	IV	1	273·3	X	1	333·3	IV
2	36·6	XI	2	96·6	V	2	156·6	XI	2	216·6	V	2	276·6	XI	2	336·6	V
3	40·0	XII	3	100·0	VI	3	160·0	XII	3	220·0	VI	3	280·0	XII	3	340·0	VI
4	43·3	I	4	103·3	VII	4	163·3	I	4	223·3	VII	4	283·3	I	4	343·3	VII
5	46·6	II	5	106·6	VIII	5	166·6	II	5	226·6	VIII	5	286·6	II	5	346·6	VIII
6	50·0	III	6	110·0	IX	6	170·0	III	6	230·0	IX	6	290·0	III	6	350·0	IX
7	53·3	IV	7	113·3	X	7	173·3	IV	7	233·3	X	7	293·3	IV	7	353·3	X
8	56·6	V	8	116·6	XI	8	176·6	V	8	236·6	XI	8	296·6	V	8	356·6	XI
9	60·0	VI	9	120·0	XII	9	180·0	VI	9	240·0	XII	9	300·0	VI	9	360·0	XII

TABLE XXII.—Ahargana.

CENTURIES.

A.D.	K.Y.	Days.	A.D.	K.Y.	Days.	A.D.	K.Y.	Days.	A.D.	K.Y.	Days.	A.D.	K.Y.	Days.
101 B.C.	3001	1096141·28	**400**	3501	1278770·66	**900**	4001	1461400·03	**1400**	4501	1644029·41	**1900**	5001	1826658·79
1 B.C.	3101	1132667·15	**500**	3601	1315296·53	**1000**	4101	1497925·91	**1500**	4601	1680555·29	**2000**	5101	1863184·67
100 A.D.	3201	1169193·03	**600**	3701	1351822·41	**1100**	4201	1534451·78	**1600**	4701	1717081·16	**3000**	5201	2228443·42
200	3301	1205718·90	**700**	3801	1388348·28	**1200**	4301	1570977·66	**1700**	4801	1753607·04	**4000**	5301	2593702·18
300	3401	1242244·78	**800**	3901	1424874·16	**1300**	4401	1607503·54	**1800**	4901	1790132·91	**5000**	5401	2958960·94

N.B.—For centuries prior to **1 B.C.** (3101 K.Y.), subtract from the ahargana for **1** B.C. the **ahargana** for 100, 200......3000 years as the case may be according to last column of next table. Supposing we want the ahargana for Rama's birthday (according to Bentley), *viz.*, the 33rd day of Solar Year 962 B.C. (*i.e.*, 39th year of century beginning with B.C. 1001),

			Days.
We have B.C. 1	Ahargana	... ...	1132667·15
Deduct for 1000 years	Do.	... ...	—365258·76
			767408·39
Add for 39 years	Do.	... ...	+14245·09
Do. 33 days	Do.	... ...	+33·00
B.C. 962, 33rd day of Solar Year,			781686·48 Ahargana required.

ODD YEARS.

Yrs.	Days.	Yrs.	Days.	Yrs.	Days.	Yrs.	Days.	Yrs.	Days.	Yrs.	Days.
1	365·26	**21**	7670·43	**41**	14975·61	**61**	22281·78	**81**	29585·95	**200**	73051·75
2	730·52	**22**	8035·69	**42**	15340·87	**62**	22646·04	**82**	29951·22	**300**	109577·63
3	1095·78	**23**	8400·95	**43**	15706·13	**63**	23011·30	**83**	30316·48	**400**	146103·50
4	1461·03	**24**	8766·21	**44**	16071·38	**64**	23376·56	**84**	30681·73	**500**	182629·38
5	1826·29	**25**	9131·47	**45**	16436·64	**65**	23741·82	**85**	31046·99	**600**	219155·25
6	2191·55	**26**	9496·73	**46**	16801·90	**66**	24107·08	**86**	31412·25	**700**	255681·13
7	2556·81	**27**	9861·99	**47**	17167·16	**67**	24472·34	**87**	31777·51	**800**	292207·00
8	2922·07	**28**	10227·24	**48**	17532·42	**68**	24837·59	**88**	32142·77	**900**	328732·88
9	3287·33	**29**	10592·50	**49**	17897·68	**69**	25202·85	**89**	32508·03	**1000**	365258·76
10	3652·59	**30**	10957·76	**50**	18262·94	**70**	25568·11	**90**	32873·29	**2000**	730517·51
11	4017·85	**31**	11323·02	**51**	18628·20	**71**	25933·37	**91**	33233·55	**3000**	1095776·27
12	4383·10	**32**	11688·28	**52**	18993·45	**72**	26298·63	**92**	33603·80	**4000**	1461035·03
13	4748·36	**33**	12053·54	**53**	19358·71	**73**	26663·89	**93**	33969·06	**5000**	1826293·78
14	5113·62	**34**	12418·80	**54**	19723·97	**74**	27029·15	**94**	34334·32		
15	5478·88	**35**	12784·06	**55**	20089·23	**75**	27394·41	**95**	34699·58		
16	5844·14	**36**	13149·31	**56**	20454·49	**76**	27759·66	**96**	35064·84		
17	6209·40	**37**	13514·57	**57**	20819·75	**77**	28124·92	**97**	35430·10		
18	6574·66	**38**	13879·83	**58**	21185·01	**78**	28490·18	**98**	35795·36		
19	6939·92	**39**	14245·09	**59**	21550·27	**79**	28855·44	**99**	36160·62		
20	7305·17	**40**	14610·35	**60**	21915·52	**80**	29220·70	**100**	36525·88		

Models for Compendious Working of Tithis, Nakshatras and Yogas.

These models are chiefly intended to illustrate the use of the Eye-Table, which is a companion to Tables VIII IX, X, XI, XII and XVII for finding longitudes, rasis, solar dates and, lastly and chiefly, the ending moments of any Tithi, Nakshatra, or Yoga.

Table XII and Eye-Table.—Lunar Tithis (A.D. 1840–A.D. 1920).

Required the ending moment of (Lunar) Ashada Sukla Ashtami, Saka 1832, Vik. 1967.

		d.	gh.	p.		gh.	⊙'s Anom. d.	gh.	☾'s Anom. d.	gh.	
Mean ending moment of Ashadha New Moon Saka 1832. (Table XII) A.D. 1910. ...	... Jl.	7	10	57			84	58	4	29	
Collective duration of 8 tithis (Eye-Table)		7	52	29	⊙'s Eqn. (Eye-Tab.)	—2	7	52	7	52	
Ending moment of mean Tithi	... Jl.	15	3	26	☾'s Eq. (Eye-Tab.)	—9	92	50	12	21	
Sum of ⊙'s and ☾'s Equations	...		—11							—2	(⊙'s eqn.)
	Jl.	14	52			—11			12	19	

The ending moment of the tithi (Lanka time) was, therefore, 52 ghatikas after Lanka sunrise on 14 July 1910. If we want local time, we should use Table XIII.

Tables XII, XI and IX-*l* :—Nakshatras and Yogas (A.D. 1840–A.D. 1920). Eye-Table not used.

Required the ending moment of *Krittika Nakshatra for the month of July 1910.*

Since Ashadha New Moon fell on 7 July 1910 and Krittika Nakshatra in Ashadha ends about 25 days from New moon (Table XI) which would take us into August, we take the previous New moon.

	d.	gh.	p.		d.	gh.	p.	☾'s Anom. d.	gh.	p.	
(Tab. XII) Jyeshtha New Moon ... A. D. 1910.				Je.	7	39	7	2	30	40	
(Tab. XI-A) Longest interval from Jyesh. New Moon to Krit. (No. 3) Nak. ...	28	18	39								
(Tab. XI-A) Deduct for Nak. in S.Y. A.D. 1910 ...	1	56	18		26	22	21	26	22	21	
	26	22	21	Je.	34	1	28	28	53	1	
(Tab. IX-*l*) ☾'s Nak. Eqn. for An. of 1 d. 19 gh. 44 p.						—6	20	27	33	17	Anom. month
				33 Je. *i.e.*, Jl. 3,		55	8	1	19	44	

The ending moment of Krittika Nakshatra in July 1910, was 55 ghatikas after Lanka sunrise on 3 July 1910. If we want local time, we should use Table XIII.

For Yogas proceed similarly, but add together ⊙'s and ☾'s Yoga Eqns. by Tab. IX-*i*.

Table X and Eye-Table.—Lunar Tithis (ANY YEAR IN TAB. X.)

This method will be of immense service to Epigraphists who will require the English equivalents of thousands of tithis ranging from 1 B.C. to modern times. With Table X and the Eye-Table the operation can be performed in less than a minute. Thus, *Required the ending moment of Ashada Sukla 12, A.D. 484, K.Y. 3585.*

	Week-day.	Month and day.	Fraction of day.			⊙'s Anom.	☾'s Anom.	
Mean ending moment of Ashada New moon Tithi. A.D. 484 (Table X).	7	Je. 9	·67	⊙'s Eqn. (Eye-Tab.)	—·04.	24·39	4·49	
						59·06	3·95	
						83·45	8·44	
Collective duration of 12 tithis (Eye-Tab.)	11 +1*	11	·81	☾'s Eqn. (Eye-Tab.)	+·41	11·81	11·81	
	19	21	·48		+·37	95·26	20·25	
Sum of ⊙'s and ☾'s Equations	...	...	+·37				—·04	(⊙'s Eqn.)
(19–14)=	5	21	·85				20·21	

ANSWER.—*Thursday, 21 June A.D. 484, at ·85 (i.e., by Eye-Table, 51 ghatikas or 20½ hours) after sunrise (Lanka time).* The absolutely correct time differs from the above by only 11 palas, as we may see at p. 91, Sec. **259** of the text.

* When the sum of the several fractions of a day in the column headed *fraction of day* exceeds unity, we should add 1 to the "*Week-day*" column.

TABLES XVII, XI, X, VIII, V, III, AND EYE-TABLE.—NAKSHATRAS AND YOGAS

THREE ALTERNATIVE METHODS TO CHOOSE FROM. (ANY YEAR IN TAB. X). Table IX not used.

Required the Nakshatra current at the ending moment of above Tithi.

By Table VIII (last col.) the sun's long. for Nak. corresponding to 95 days of the solar year is.	7·5051
By Table V (last col.) ⊙'s long. for ·26 day is ...	·02
⊙'s long. corresponding to 95·26 days ...	7·53
Add Tithi equivalent in days	11·81
	19·34

By Table III, at 19·34 days of lunation space, the Nakshatra current is the 18th, *i.e.*, Jyeshtha. This, then, was the Nakshatra *current* at the ending moment of Ash. Suk. 12, A.D. 484.

SECOND METHOD

We may calculate directly from Tab. XVII-A and C (pp. 207, 209), ⊙'s long. for 95·26 days of Solar year, *i.e.*, 91·49°–·54° + ·26°=91·21°. Add ☾'s-⊙'s long. *i.e.*, No. of tithi × 12°=12 × 12°=144°

Total ... 235·21°

This, by Eye-Tab. is the long. of *Nakshatra* Jyeshtha.

THIRD METHOD BY TABLE XI, FOR ENDING MOMENT OF NAKSHATRA.

Annual correction for Nakshatras for A.D. 484 is that for 24·39, *i.e.*, 1·79+·03=1·82 (Tab. X and XI).
The ending moment of No. 18 Nak. in Lunar Ashada was 13·95 – 1·82=12·13 days from the new moon, *i.e.*, ·32 of a day after the mean tithi, whose ending moment is 11·81 days from New moon.
The ☾'s anom. then was ·32 more than that of the tithi, *i.e.*, 20·57, for which the Nak. eqn. is +·38 (Eye-Tab.).
The ending moment of the Nak. No. 18, *i.e.*, Jyeshtha, was, therefore, ·48+·32+·38=1·18 or ·18 of a day after sunrise on the next day after the 21st June.

Yoga current at ending moment of above tithi.

2 × ⊙'s Longitude as in 1st column 182·42.
Add. ☾'s-⊙'s long.=No. of Tithi × 12°= 144°

Total ... 326·42°

This, by Eye-Tab., is the long. of *Yoga* Brahman.

[*N.B.*—Readers who have to use this Eye-Table frequently are advised either to get it mounted on cloth or to get a mounted spare copy, *price* four annas.]

EYE-TABLE.

SANKRANTIS, *i.e.*, (1) MOMENTS OF COMMENCEMENT OF *SOLAR* MONTHS, (2) LATEST POSSIBLE MOMENT

Order of Signs of Zodiac or Rasis	**1**	**2**	**3**	**4**	
Bengal Solar months	**Vaisakha**	**Jyeshtha**	**Ashadha**	**Sravana**	**B**
Malayalam Solar months ; also names of Rasis	**Mesha Medam**	**Vrishabha Edavam**	**Mithunam**	**Karkadam**	
Degree of Longitude at planet's entry into each sign	**0°**	**30°**	**60°**	**90°**	
Tamil Solar months	**Chittirai**	**Vaikasi**	**Ani**	**Adi**	
Moment of Sankranti in days of Solar Year, and decimals of a day ...	0·0	30·9353	62·3555	94·0003	
Do. do. Ghatikas and Palas	0, 0, 0	30, 56, 7	62, 21, 20	94, 0, 1	
English date corresponding to each Sankranti (A.D. 1911)	Ap. 13	May 14	June 14	July 16	
Lunar Month : each month commences *before* Sankranti noted in *next* column. ...	*(1) Vaisakha*	*(2) Jyeshtha*	*(3) Ashadha*	*(4) Sravana*	*(5]*

Tithi equivalents in days, decin

Tithis	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Tithi equivalent in days	·98	1·97	2·95	3·94	4·92	5·91	6·89	7·87	8·86	9·84	10·83	11·81	12·80	13·78	14·76 ·1

	1	**2**	**3**	**4**	**5**	**6**	**7**	
Do. do. **Ghatikas, and Palas** ...	0, 59, 4	1, 58, 7	2, 57, 11	3, 56, 15	4, 55, 18	5, 54, 22	6, 53, 26	7,
	16	**17**	**18**	**19**	**20**	**21**	**22**	
Do. do. do. ...	15, 44, 59	16, 44, 2	17, 43, 6	18, 42, 10	19, 41, 14	20, 40, 17	21, 39, 21	22,

Order, Names and Longitudes of

Nakshatras	**Asvini**	**Bharani**	**Krittika**	**Rohini**	**Mrigasira**	**Ardra**
YOGAS	*Vishkambha*	*Priti*	*Ayushmat*	*Saubhagya*	*Sobhana*	*Atiganda*
	1	**2**	**3**	**4**	**5**	**6**
Longitude at Planet's entry into each Nakshatra; *also longitude, at commencement, of each Yoga.*	0°	13° 20′	26° 40′	40° 0′	53° 20′	66° 40′
Nakshatras	**Svati**	**Visakha**	**Anuradha**	**Jyeshtha**	**Mula**	**Pur. Ashad**
YOGAS	*Vajra*	*Siddhi*	*Vyatipata*	*Variyas*	*Parigha*	*Siva*
	15	**16**	**17**	**18**	**19**	**20**
Longitude at Planet's entry into each Nakshatra; *also longitude, at commencement, of each Yoga.*	186° 40′	200° 0′	213° 0′	226° 40′	240° 0′	253° 20′

(Surya Siddhanta.) **Moon's Equation of the Centre and Moon's Anomaly in Days and Decimals**

	·00	**·01**	**·02**	**·03**	**·04**	**·05**	**·06**	**·07**	**·08**	**·09**	**·10**	**·11**	**·12**	**·13**	**·14**	**·15**	**·16**	**·17**	**·18**	**·19**	**·20**	**·21**
* −	·00	·11	·23	·34	·46	·58	·69	·81	·93	1·04	1·16	1·28	1·40	1·52	1·64	1·77	1·89	2·02	2·14	2·27	2·40	2·53
* −	13·78	13·68	13·59	13·49	13·40	13·30	13·20	13·11	13·01	12·91	12·81	12·71	12·61	12·51	12·41	12·31	12·20	12·10	11·99	11·88	11·77	11·66
*+	13·78	13·87	13·97	14·06	14·16	14·25	14·35	14·45	14·54	14·64	14·74	14·84	14·94	15·04	15·14	15·24	15·35	15·45	15·56	15·67	15·78	15·89
*+	27·55	27·44	27·32	27·21	27·09	26·98	26·86	26·74	26·63	26·51	26·39	26·27	26·15	26·03	25·91	25·79	25·66	25·54	25·41	25·28	25·15	25·02
Equation for Nakshatras ...	·04	·05	·06	·06	·07	·08	·09	·10	·11	·12	·13	·14	·15	·16	·17	·18	·18	·19				
Equation for Yogas ...	·03	·04	·05	·06	·06	·08	·08	·09	·10	·11	·12	·13	·14	·15	·15	·16	·17	·18				

(Surya Siddhanta.) **Sun's equation of the Centre and Sun's Anomaly in days of the Solar year and decimals**

+·18	**+·175**	**+·17**	**+·16**	**+·15**	**+·14**	**+·13**	**+·12**	**+·11**	**+·10**	**+·09**	**+·08**	**+·07**	**+·06**	**+·05**	**+·04**	**+·03**	**+·02**	**+·01**	**·00**	**−·01 -**
358	0	7	16	23	28	33	38	42	46	50	54	57	61	64	68	71	74	77	80·5	84
354	343	334	327	321	315	310	305·5	301	297	293	289	286	283	279	276	273	269·5	266	263	260

(Surya Siddhanta.) **Moon's Equation of the Centre in Ghatikas and Moon's Anoma**

Ghatikas		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Days & Ghat. (neg. eqn.)	* −	...	0, 11	0, 23	0, 34	0, 46	0, 58	1, 10	1, 22	1, 34	1, 46	1, 59
Do. do.	* −	13, 47	13, 37	13, 28	13, 18	13, 8	12, 59	12, 49	12, 39	12, 29	12, 19	12, 8
Do. (pos. eqn.)	*+	13, 47	13, 56	14, 6	14, 15	14, 25	14, 35	14, 44	14, 54	15, 4	15, 15	15, 25
Do. do.	*+	27, 33	27, 22	27, 10	26, 59	26, 47	26, 35	26, 23	26, 12	26, 0	25, 47	25, 35

(Surya Siddhanta.) **Sun's Equation of the Centre in Ghatikas and Sun's Anomaly in Days.** (The

Ghatikas	**+11**	**+10½**	**+10**	**+9**	**+8**	**+7**	**+6**	**+5**	**+4**	**+3**	**+1**
Days	359	1	11	23	32	39½	46	53	59	64	7
Do.	354	343	333	321	312	304	297	291	285	279	27

29·53059 d. (1 Syn. mo.)=29 d., 12 hrs. ; 44 min., 3½ sec. ; 27·5546 d.=27 d. 13 hrs., 18 min., 37 sec. **Hours as Decimal Fractions of a D**

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Fraction of a day=hours	·04	·08	·12	·17	·21	·25	·29	·33	·37	·42	·46	·50	·54

29·5306 d. (1 Syn. mo.)=29 d., 31 gh., 50 p. ; 27·5546 d. (1 an. mo.)=27 d., 33 gh., 17 p. **Ghatikas as Decimal**

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Do. do. **=Ghatikas** ...	·02	·03	·05	·07	·08	·10	·12	·13	·15	·17	·18	·20	·22
	31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**
Do. do. = do. ...	·52	·53	·55	·57	·58	·60	·62	·63	·65	·67	·68	·70	·72

ATEST POSSIBLE MOMENTS OF COMMENCEMENT OF *LUNAR* MONTHS (Surya Siddhanta), (3) Longitudes of Rasis.

3 Ashadha	4 Sravana	5 Bhadrapada	6 Asvina	7 Karttika	8 Margasira	9 Pausha	10 Magha	11 Phalguna	12 Chaitra	
Mithunam	Karkadam	Simham	Kanni	Tulam	Vrischikam	Dhanus	Makaram	Kumbham	Minam	
60°	90°	120°	150°	180°	210°	240°	270°	300°	330°	
Ani	Adi	Avani	Purattasi	Aippasi	Kartigai	Margali	Tai	Masi	Panguni	
62·3555	94·0003	125·4755	156·4942	186·9355	216·8289	246·3192	275·6369	305·0850	334·9053	365·2588
62, 21, 20	94, 0, 1	125, 28, 32	156, 29, 39	186,56, 8	216, 49, 44	246, 19, 9	275, 38, 13	305, 5, 6,	334, 54, 19	365, 15, 32
June 14	July 16	Aug. 16	Sep. 16	Oct. 17	Nov. 16	Dec. 15	Jan. 14	Feb. 12	Mar. 13	

(3) *Ashadha* (4) *Sravana* (5) *Bhadrapada* (6) *Asvina* (7) *Karttika* (8) *Margasira* (9) *Pausha* (10) *Magha* (11) *Phalguna* (12) *Chaitra* (13) *Chaitra*

thi equivalents in days, decimals of a day, Ghatikas and Palas.

(Increase of Anomaly).

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	28	29	30
10·83	11·81	12·80	13·78	14·76	15·75	16·73	17·72	18·70	19·69	20·67	21·65	22·64	23·62	24·61	25·59	26·58	27·56	28·55	29·53	·01	1·00	1·98

5	6	7	8	9	10	11	12	13	14	15	30 tithis	1 Anom. mo.
55, 18	5, 54, 22	6, 53, 26	7, 52, 29	8, 51, 33	9, 50, 37	10, 49, 40	11, 48, 44	12, 47, 48	13, 46, 51	14, 45, 55	29, 31, 50,	27, 13, 17,

(Increase of anomaly)

20	21	22	23	24	25	26	27	28	29	30	28	29	30
41, 14	20, 40, 17	21, 39, 21	22, 38, 24	23, 37, 28	24, 36, 32	25, 35, 36	26, 34, 39	27, 33, 43	28, 32, 46	29, 31, 50	0, 0, 26	0, 59, 29	1, 58, 33

, Names and Longitudes of Nakshatras and *YOGAS*.

ini	Mrigasira	Ardra	Punarvasu	Pushya	Aslesha	Magha	Pur. Phalguni	Utt. Phalguni	Hasta	Chitra
igya	*Sobhana*	*Atiganda*	*Sukarman*	*Dhriti*	*Sula*	*Ganda*	*Vriddhi*	*Dhruva*	*Vyaghata*	*Harshana*
	5	6	7	8	9	10	11	12	13	14
0′	53° 20′	66° 40′	80° 0′	93° 20′	106° 40	120° 0′	133° 20′	146° 40′	160° 0′	173° 20′

shtha	Mula	Pur. Ashada	Utt. Ashada	Sravana	Sravishta	Satabhishaj	Pur. Bhadr.	Utt. Bhadr.	Revati
riyas	*Parigha*	*Siva*	*Siddha*	*Sadhya*	*Subha*	*Sukla*	*Brahman*	*Indra*	*Vaidhriti*
18	19	20	21	22	23	24	25	26	27
° 40′	240° 0′	253° 20′	266° 40′	280° 0′	293° 20′	306° 40′	320° 0′	333° 20′	346° 40′

maly in Days and Decimals of a Day.

(*The signs - and + are to be applied to the equation in heavy type and not to the anomaly.)

6	·17	·18	·19	·20	·21	·22	·23	·24	·25	·26	·27	·28	·29	·30	·31	·32	·33	·34	·35	·36	·37	·38	·39	·40	·41
9	2·02	2·14	2·27	2·40	2·53	2·67	2·80	2·94	3·08	3·23	3·38	3·53	3·69	3·85	4·01	4·19	4·37	4·56	4·76	4·98	5·21	5·48	5·78	6·14	6·70
0	12·10	11·99	11·88	11·77	11·66	11·55	11·43	11·31	11·19	11·07	10·94	10·81	10·67	10·53	10·38	10·23	10·07	9·90	9·71	9·51	9·30	9·06	8·78	8·43	7·90
5	15·45	15·56	15·67	15·78	15·89	16·00	16·12	16·24	16·36	16·49	16·61	16·75	16·88	17·03	17·17	17·33	17·49	17·66	17·84	18·03	18·25	18·49	18·77	19·12	19·65
6	25·54	25·41	25·28	25·15	25·02	24·89	24·75	24·61	24·47	24·32	24·18	24·02	23·87	23·70	23·54	23·36	23·18	22·99	22·79	22·58	22·34	22·08	21·73	21·41	20·86
5	·16	·17	·18	·18	·19	·20	·21	·22	·23	·24	·25	·26	·27	·28	·29	·30	·30	·31	·32	·33	·34	·35	·36	·37	·38
4	·15	·15	·16	·17	·18	·19	·20	·21	·21	·22	·23	·24	·25	·26	·27	·27	·28	·29	·30	·31	·32	·33	·34	·34	·35

he Solar year and decimals of a day.

(The anomalies are entered in ordinary type and the equations, with appropriate signs, in heavy type.)

+·03	**+·02**	**+·01**	**·00**	**-·01**	**-·02**	**-·03**	**-·04**	**-·05**	**-·06**	**-·07**	**-·08**	**-·09**	**-·10**	**-·11**	**-·12**	**-·13**	**-·14**	**-·15**	**-·16**	**-·17**	**-·175**	**-·18**
71	74	77	80·5	84	87	90	93·5	97	100	103	107	111	115	119	123	128	132	138	145	154	160	168
273	269·5	266	263	260	257	254	250	247	244	240	237	233	229	225	221	216	211	206	199	190	183	176

hatikas and Moon's Anomaly in Days and Ghatikas.

(* The signs - and + are to be applied to the equation and not to the anomaly.)

7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1, 22	1, 34	1, 46	1, 59	2, 11	2, 24	2, 37	2, 51	3, 5	3, 20	3, 35	3, 51	4, 8	4, 26	4, 46	5, 8	5, 34	6, 8	7, 18
12, 39	12, 29	12, 19	12, 8	11, 58	11, 46	11, 35	11, 24	11, 12	10, 59	10, 46	10, 32	10, 17	10, 1	9, 43	9, 22	8, 59	8, 26	7, 20
14, 54	15, 4	15, 15	15, 25	15, 36	15, 47	15, 58	16, 10	16, 22	16, 34	16, 47	17, 2	17, 16	17, 33	17, 50	18, 11	18, 35	19, 7	20, 15
26, 12	26, 0	25, 47	25, 35	25, 22	25, 9	24, 56	24, 42	24, 28	24, 14	23, 58	23, 42	23, 25	23, 7	22, 47	22, 25	21, 59	21, 25	20, 17

Anomaly in Days.

(The anomalies are entered in ordinary type and the equations, with appropriate signs, in heavy type. *Reverse Sign for Yogas.*)

+5	**+4**	**+3**	**+2**	**+1**	**0**	**-1**	**-2**	**-3**	**-4**	**-5**	**-6**	**-7**	**-8**	**-9**	**-10**	**-10½**	**-11**
53	59	64	70	75	80	86	91	97	102	108	115	122	129	138	150	160	167
291	285	279	274	269	263	258	252	247	241	235	229	222	215	205	193	183	177

as Decimal Fractions of a Day.

365·25876 d. (1 Indian Sol. Year)=365 d., 6 hrs., 12 min., 37 sec.

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Minutes 14	29	44
·7	·42	·46	·50	·54	·58	·62	·67	·71	·75	·79	·83	·87	·92	·96	·01	·02	·03

., 17 p. Ghatikas as Decimal Fractions of a Day.

365·25876 d. (1 Indian Sol. Year)=365 d., 15 gh., 32 p.

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
·5	·17	·18	·20	·22	·23	·25	·27	·28	·30	·32	·33	·35	·37	·38	·40	·42	·43	·45	·47	·48	·50

9	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	
65	·67	·68	·70	·72	·73	·75	·77	·78	·80	·82	·83	·85	·87	·88	·90	·92	·93	·95	·97	·98	...

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N.B.—References to the Text are by Section in *Arabic* numerals, not by page, unless the page is specially indicated; similarly, references to the Tables are by the *Roman number* of the Table (and occasionally by page, which is then specially indicated). Thus "215" means "Section **215** of the Text" and "II" means "Table II". Arabic numerals placed between brackets (except when a page of the Text is indicated), refer to the numbers of sub-paragraphs or sub-entries. Thus "112 (16)", "XIII-A (82)", "XIV (57)," "I (15)". The names of (12) signs of the Zodiac, (15) Tithis, (27) Nakshatras, (27) Yogas, (8) Karanas, (60) years in Jupiter's Cycle (Northern and Southern Systems), places whose latitude and longitude are given in Tables XIII and XIII-A, festivals noted under tithis, (21) eras noted under Sec. 112 etc., etc., have all been carefully indexed by references to Section, Table and sub-number.

A

A—(*contd.*)

C

C—(*contd.*)

C—(contd.)

D

D—(contd.)

E

F

J—(contd.)

K

K—(contd.)

L

S—(contd.)

S—(contd.)

S—(contd.)

T

U

V